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Personnel

**COMBAT ARMS TRAINING PROGRAMS
CREW SERVED WEAPONS**

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This manual implements Air Force Policy Directive (AFPD) 36-22, *Military Training, and Air Force Instruction* (AFI) 36-2226, *Combat Arms Program*. It gives guidance and procedures for M60 or M240B Machine Guns, MK-19 Machine Gun, and M2 Machine Gun programs. **Records Management.** Maintain and dispose of all records created by this publication in accordance with AFMAN 37-123, *Management of Records*, and AFMAN 37-139, *Records Disposition Schedule*. Process proposed supplements as required by AFI 33-360 Volume 1, *AF Publications and Form Management Programs--Developing and Processing Publications*. Submit recommended changes or clarification requests through MAJCOM channels to HQ AFSFC/SFWC, 1517 Billy Mitchell Blvd, Lackland AFB, TX 78236-0119. Do not use the Air Force Innovative Development Through Employee Awareness (IDEA) Program to suggest changes to Air Force Qualification Courses of Fire. This Air Force Manual applies to Air Force Reserve Command (AFRC) and Air National Guard units.

SUMMARY OF REVISIONS

This document is substantially revised and must be completely reviewed.

This revision updates the Combat Arms Weapons Training Program. It adds the M240B Medium Machine Gun to the crew served weapons training program. It incorporates the requirement to teach the Tactics, Techniques and Procedures needed to effectively employ crew served weapons.

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Chapter 1

M60 OR M240B MEDIUM MACHINE GUN TRAINING PROGRAM

1.1. M60 or M240B Machine Gun Air Force Qualification Courses (AFQC). These courses provide Air Force members with the minimum training, evaluations and the Tactics, Techniques, and Procedures (TTPs) required to ensure the gunners ability to tactically employ either the M60 or M240B Machine Guns. If Crew Served Machine Gunner training is required at their next duty station, personnel qualified to the Individual Machine Gunner standard during the Security Forces Apprentice Course only need to complete the training (classroom and live-fire) to meet the Crew-Served Machine Gunner standard (this training would not extend the qualification expiration date).

1.1.1. Individual Machine Gunner. A machine gunner qualified to tactically employ the M60 or M240B in the bipod mode (from 300 to 800 meters), when vehicle mounted and has met the training requirements mandated within this AFMAN.

1.1.2. Crew-Served Machine Gunner. A machine gunner qualified to tactically employ the M60 or M240B in all modes with the aid of an assistant gunner and has met the training requirements mandated within this AFMAN. Assistant machine gunners must complete the same training program and meet the same qualification standards as primary machine gunners. All Security Forces personnel trained on the M60 or M240B will be trained to the Crew Served Machine Gunner standard. Personnel trained for the purpose of mobility should be trained to the Crew Served Machine Gunner Standard.

1.2. Training Overview:

1.2.1. Initial Machine Gunner Qualification. This is the trainee's first participation in the M60 or M240B Individual Qualification Training Program. Initial training consists of classroom instruction, qualification on the required evaluation phases of AFQC, and passing the performance tests. Since full distance (AFQC/FD) training is desired, the use of 10-meter initial qualification should only be used as a last resort. However, MAJCOM Functionals may grant individual bases permission to qualify personnel using **Figure 1.2.** as an initial 10-meter course (AFQC/10M) when full distance range facilities cannot be used. The installation commander may grant permission to qualify personnel using **Figure 1.2.** as an initial 10-meter course (AFQC/10M) for personnel attending technical training courses at Lackland AFB when full distance ranges cannot be used. The AF Form 522, USAF Ground Weapons Training Data, will reflect a 12-month qualification.

1.2.2. Live-fire Recurring Training -- 12-Month. This is qualification training after initial qualification. It consists of classroom instruction, qualification on the required evaluation phases of the AFQC (Full Distance or 10-Meter) and passing the performance evaluations. **Since full distance (AFQC/FD) training is desired, the use of 10-meter recurring qualification should only be used as a last resort. However, MAJCOM Functionals may grant individual bases permission to qualify personnel using Figure 1.2. as a recurring 10-meter course (AFQC/10M) when full distance range facilities cannot be used.** This evaluation is mandatory on an annual basis for all machine gunners. Non Security Forces personnel moving from individual to crew served status must meet all the requirements as mandated in this AFMAN. The AF Form 522 will reflect a 12-month qualification.

1.2.3. Remedial Training. This is the minimum training needed to correct deficiencies causing an individual to fail an evaluation.

1.2.4. Performance Evaluation. Performance evaluations, located in lesson plans, require weapon operator skills certification. Evaluation is mandatory during initial and recurring training for individual and crew-served personnel.

1.3. Instructor Guidelines.

1.3.1. Classroom. Instructors will help trainees during portions of training techniques requiring physical handling of weapons. They will supervise, evaluate, conduct performance evaluations and assist trainees during operator maintenance (care and cleaning). See AFI 36-2226, *The Combat Arms Program*, for student to instructor ratios.

1.3.2. Range. Instructors will supervise, assist, coach and teach the tactics, techniques and procedures during prefire set-up, practice and evaluation phases of fire. Each firing point instructor conducts the course of fire, to include monitoring time limits, at the firing point. To ensure safe range operations, close communication is essential between the range safety instructor and all point instructors. See AFI 36-2226 for student to instructor ratios.

1.3.3. Range Safety Instructor/Tower Operator. This instructor monitors all firing points and has responsibility and authority for safe and effective range operations during range training sessions. This individual may work directly on the firing line if a fixed control tower is not on the range. **NOTE: This position is in addition to each firing point instructor.** The Range Safety Instructor may not simultaneously serve as a firing point instructor or complete live-fire, unless relieved of Range Safety Instructor Duties. See AFI 36-2226 for exceptions.

1.4. M60 or M240B Machine Guns Qualification: Plan of Instruction. The plan in [Table 1.1](#) is intended to provide instruction standardization. This program is mandatory for initial and recurring qualification training. Remedial training is in-depth, concentrating on known problems. Trainees must meet and be evaluated to the performance standards of these training objectives. **NOTE: Training times will vary depending on class size, trainee experience level, range location, etc.** Regional training centers/technical training centers with large student loads may encounter increased training times exceeding the times in [Table 1.1](#). and may need to increase training times accordingly.

Table 1.1. M60 or M240B Machine Gun Training Requirements.

	<u>If member is receiving</u>	<u>Approx. training time is</u>	<u>Total rounds are</u>
1	Initial/Recurring Training Qualification		
1a	M60 or M240B All Phases	40 - 48 Hours	1300 (Full Distance)
1b	M60 or M240B All Phases	40 - 48 Hours	1200 (10-meter)
1c	M60 or M240B Phases I, II and V (Bipod Only)	13 - 20 Hours	634 (Full Distance)
1d	M60 or M240B Phases I, II and V (Bipod Only)	13 - 20 Hours	600 (10-meter)
2	Remedial	As required	As required

1.5. Training Goal. The training goal is to instill confidence in the trainee to develop and maintain the capability to tactically employ the M60 or M240B against enemy targets and maintain the weapon to the

level authorized for the operator. With the exception of operator maintenance (care and cleaning), trainees must perform all evaluated tasks without assistance.

1.6. Training Objectives. The training objectives required for successful completion of this program are listed in [Table 1.2](#). Intermediate training objectives. The trainee must be familiar with:

- 1.6.1. Safety rules and procedures.
- 1.6.2. Characteristics, nomenclature and types of ammunition.
- 1.6.3. Methods of destruction.
- 1.6.4. Stoppages and malfunctions.
- 1.6.5. Roles of the M60 or M240B.
- 1.6.6. Classes of fire and types of targets.
- 1.6.7. Range determination.
- 1.6.8. Applying overhead fire.
- 1.6.9. Zeroing the rear sight.
- 1.6.10. Sight adjustments.
- 1.6.11. Adjusted aiming point method.
- 1.6.12. Alternate methods of laying the gun.

Table 1.2. M60 or M240B Machine Guns Training Objectives/Intermediate Training Objectives (ITO).

	Objective	Condition	Standard
		Given a:	
1.	Operate M60 or M240B.	M60 or M240B with dummy ammunition.	Operate M60 or M240B.
ITO			
1.1	Perform Clearing procedures.	M60 or M240B	Clear M60 or M240B.
1.2	Half load and full load (see paragraph 1.7.1.3.6.)	M60 or M240B and dummy ammunition.	Half-load and full load the M60 or M240B.
1.3	Clear from a full-load and half-load.	M60 or M240B and dummy ammunition.	Clear from a full-load and a half-load on M60 or M240B.
1.4	Immediate action procedures.	M60 or M240B and dummy ammunition.	Perform immediate action on M60 or M240B.
1.5	Preventative maintenance inspection.	M60 or M240B	Perform a preventative maintenance (prefire) inspection on M60 or M240B.

	Objective	Condition	Standard
		Given a:	
1.6	Zero and attach traversing and elevating (T&E) mechanism.	M60 or M240B and M122 or M122A1 tripod.	Zero and attach T&E mechanism to the M60 or M240B and either the M122 or M122A1 tripod.
1.7	Mount M60 or M240B on M122 or M122A1 tripod.	M60 or M240B and M122 or M122A1 tripod.	Mount M60 or M240B on the M122 or M122A1 tripod.
1.8	Mount M60 or M240B on a vehicle mount.	M60 or M240B and appropriate mounts.	Mount M60 or M240B on a vehicle.
1.9	Place M60 or M240B into action.	M60 or M240B	Place M60 or M240B into action.
1.10	Conduct barrel change.	M60 or M240B	Conduct a barrel change on M60 or M240B.
1.11	Take M60 or M240B out of action.	M60 or M240B	Take M60 or M240B out of action.
1.12	Install and remove blank firing attachment.	M60 or M240B and appropriate blank firing attachment.	Install and remove the appropriate blank firing attachment.
1.13	Install and remove night vision device.	M60 or M240B and AN/PVS-4.	Install and remove AN/PVS-4 night vision device on M60 or M240B.
2.	Performance evaluation.	M60 or M240B	Successfully complete all phases of performance evaluation within prescribed time limits.
3.	Demonstrate effective techniques of fire.	M60 or M240B	Fire M60 or M240B with sufficient accuracy to hit targets within range and capabilities of M60 or M240B and qualify on appropriate live-fire orders.
ITO			
3.1	Apply proper techniques of firing M60 or M240B during periods of good visibility.	M60 or M240B with required ammunition, equipment and firing range.	Qualify on appropriate good visibility course of fire.
3.2	Apply proper techniques of firing M60 or M240B during periods of limited visibility.	M60 or M240B with required ammunition, equipment and firing range.	Qualify on appropriate limited visibility course of fire.

	Objective	Condition	Standard
		Given a:	
3.3	Prepare range cards.	M60 or M240B with required ammunition, equipment and firing range.	Prepare a range card and qualify on course of fire.
3.3	Apply proper techniques of firing M60 or M240B while wearing Chemical Warfare Defense Ensemble (CWDE) mask and gloves.	M60 or M240B with required ammunition, equipment and firing range.	Qualify on appropriate course of fire while wearing CWDE mask and gloves.
3.4	Apply proper techniques of firing M60 or M240B while using night vision device	M60 or M240B with required ammunition, equipment and firing range.	Qualify on appropriate course of fire while using AN/PVS-4 night vision device.
4.	Perform operator maintenance.	M60 or M240B with required cleaning/ lubricating equipment and supplies.	Clean, inspect and lubricate M60 or M240B and required equipment with instructor assistance.
ITO			
4.1	Disassemble M60 or M240B.	M60 or M240B and required equipment.	Disassemble M60 or M240B to authorized level.
4.2	Clean, inspect, and lubricate M60 or M240B.	Disassembled M60 or M240B, required equipment and lubricating supplies.	Clean, inspect and lubricate M60 or M240B and required equipment.
4.3	Assemble M60 or M240B.	M60 or M240B	Assemble M60 or M240B.
4.4	Function check M60 or M240B.	M60 or M240B and dummy ammunition.	Function check M60 or M240B.

1.7. Recommended Sequence of Events for Individual Qualification Phases I - III of the AFQC.

1.7.1. First Period -- Orientation and Mechanical Training. Approximately 7 hours are needed for initial training and 4 hours for 12-month recurring training.

1.7.1.1. Prepare all required forms and documents.

1.7.1.2. Discuss:

1.7.1.2.1. M60 or M240B weapons safety.

1.7.1.2.2. M60 or M240B general description and characteristics.

1.7.1.2.3. M60 or M240B general nomenclature.

1.7.1.2.4. Methods and procedures used to destroy the M60 or M240B and equipment to prevent its use by the enemy.

1.7.1.2.5. Types of ammunition and how to care for, handle and preserve ammunition for the M60 or M240B.

- 1.7.1.2.6. Stoppages, immediate action and remedial action.
- 1.7.1.3. Explain, demonstrate, and conduct practical exercises on:
 - 1.7.1.3.1. Immediate action procedures.
 - 1.7.1.3.2. Clearing of the M60 or M240B.
 - 1.7.1.3.3. Disassembling, assembling and functionally checking the M60 or M240B.
 - 1.7.1.3.4. Caring for, cleaning and lubricating the M60 or M240B.
 - 1.7.1.3.5. Installing and removing the blank firing attachment and how to care for the M60 or M240B while using blank firing attachments.
 - 1.7.1.3.6. Loading (half-load and full-load), unloading, reloading and clearing the M60 or M240B (**half-load must be authorized within the applicable Operator's Manual**).
 - 1.7.1.3.7. Conducting a prefiring inspection of the M60 or M240B and equipment.
 - 1.7.1.3.8. Mounting and removing the M60 or M240B using vehicle mounts.
- 1.7.2. Second Period -- Effective Tactics/Techniques of Fire. Approximately 5 hours are needed for initial training and 2 hours for 12-month recurring training.
 - 1.7.2.1. Discuss:
 - 1.7.2.1.1. M60 or M240B roles.
 - 1.7.2.1.2. M60 or M240B characteristics of fire.
 - 1.7.2.1.3. M60 or M240B classes of fire.
 - 1.7.2.1.4. Principles of fire and types of targets to be engaged by an M60 or M240B.
 - 1.7.2.1.5. Tactics/Techniques of engaging visible targets during periods of limited visibility to include types of targets, fire control and target engagement.
 - 1.7.2.1.6. Explain, demonstrate and conduct practical exercises on range determination and lateral distance measurement.
- 1.7.3. Third Period -- Preparatory Marksmanship. Approximately 2 hours are needed for initial and 12-month recurring training.
 - 1.7.3.1. Explain, demonstrate and conduct practical exercises on:
 - 1.7.3.1.1. Assuming tactically sound firing positions and establishing a proper grip. (**Figure 1.5** - 1.8.)
 - 1.7.3.1.2. The proper tactics/techniques of firing while wearing CWDE mask and gloves.
 - 1.7.3.2. Discuss principles of:
 - 1.7.3.2.1. Aiming.
 - 1.7.3.2.2. Proper trigger manipulation.
 - 1.7.3.2.3. How to zero the rear sight and the adjusted aiming point method of fire adjustment.
 - 1.7.3.3. Discuss target analysis and common errors encountered in machine gun marksmanship.

1.7.3.4. Explain and demonstrate how to make sight adjustments.

1.7.4. Fourth Period -- Performance Evaluation. Approximately 1-hour is needed for initial and 12-month recurring training.

1.7.4.1. Prepare performance evaluation forms.

1.7.4.2. Brief students on evaluation criteria.

1.7.4.3. Set up weapons and equipment.

1.7.4.4. Conduct performance evaluation on:

1.7.4.4.1. Clearing.

1.7.4.4.2. Half-loading (**if authorized by Operator's Manual**).

1.7.4.4.3. Firing from the half-load (**if authorized by Operator's Manual**).

1.7.4.4.4. Clearing from the half-load (**if authorized by Operator's Manual**).

1.7.4.4.5. Full-loading.

1.7.4.4.6. Clearing from the full-load.

1.7.4.4.7. Disassembly into eight major groups.

1.7.4.4.8. Assembling.

1.7.4.4.9. Function check.

1.7.4.4.10. Immediate action procedures.

1.7.5. Fifth Period -- Live Fire and Operator Maintenance Evaluation. Approximately 5 hours are needed for initial training and 4 hours for 12-month recurring training.

1.7.5.1. Discuss range procedures and safety requirements for live firing.

1.7.5.2. Review all factors of obtaining an accurate initial burst.

1.7.5.3. Review immediate action procedures.

1.7.5.4. Conduct exercises in assuming tactically sound firing positions. (**Figure 1.3. - Figure 1.6.**)

1.7.5.5. Fire qualification course.

1.7.5.6. Evaluate trainee's proficiency in operator maintenance and function check procedures.

1.7.5.7. Trainees must correctly perform the function check.

1.7.5.8. Provide either immediate remedial training for those trainees who fail to qualify or fail to demonstrate required proficiency in operator maintenance or notify unit training sections of the status of individuals who fail.

1.7.5.9. Complete applicable blocks on the AF Forms 522 and 710.

1.8. Recommended Sequence of Events for Crew-Served Qualification (All Phases of the AFQC):

1.8.1. First Period -- Orientation and Mechanical Training. Approximately 15 hours are needed for initial training and 12 hours for 12-month recurring training.

1.8.1.1. Prepare all required forms and documents.

1.8.1.2. Discuss:

1.8.1.2.1. M60 or M240B weapons safety.

1.8.1.2.2. M60 or M240B general description and characteristics.

1.8.1.2.3. M60 or M240B general nomenclature.

1.8.1.2.4. M122 or M122A1 tripod and traversing and elevating (T&E) mechanism general description and nomenclature.

1.8.1.2.5. Methods and procedures used to destroy the M60 or M240B and equipment to prevent its use by the enemy.

1.8.1.2.6. Ammunition types for the M60 or M240B.

1.8.1.2.7. Stoppages, immediate action and remedial action.

1.8.1.3. Explain, demonstrate and conduct practical exercises on:

1.8.1.3.1. Immediate action practical exercises.

1.8.1.3.2. Clearing of the M60 or M240B.

1.8.1.3.3. Disassembling the M60 or M240B.

1.8.1.3.4. Assembling the M60 or M240B.

1.8.1.3.5. Functionally checking the M60 or M240B.

1.8.1.3.6. Caring for, cleaning and lubricating the M60 or M240B and its equipment.

1.8.1.3.7. Mounting the M60 or M240B and zeroing, attaching and operating the T&E mechanism.

1.8.1.3.8. Installing and removing the appropriate blank firing attachment and discuss how to care for the M60 or M240B while using blank firing attachments.

1.8.1.3.9. Loading (half-load, full-load), unloading, reloading and clearing the M60 or M240B (if authorized by Technical Orders).

1.8.1.3.10. Mounting night vision device.

1.8.1.3.11. Conducting barrel changes.

1.8.1.3.12. Conducting a prefiring inspection of the M60 or M240B and equipment.

1.8.1.3.13. Placing the M60 or M240B into and out of action.

1.8.1.3.14. Mounting and removing the M60 or M240B using vehicle mounts.

1.8.2. Second Period -- Effective Techniques of Fire. Approximately 5 hours are needed for initial training and 3 hours for 12-month recurring training. Discuss:

1.8.2.1. M60 or M240B roles.

1.8.2.2. M60 or M240B characteristics of fire.

1.8.2.3. M60 or M240B classes of fire.

- 1.8.2.4. Characteristics of overhead fire.
- 1.8.2.5. Principles of fire and types of targets to be engaged by the M60 or M240B.
- 1.8.2.6. The tactics, technique and procedures of engaging visible targets during periods of limited visibility to include types of targets, fire control and target engagement.
- 1.8.2.7. The tactics, techniques and procedures of delivering preplanned fire during periods of limited visibility to include grazing fire, fire control and methods of laying the gun.
- 1.8.2.8. The tactics, techniques and procedures of predetermined fire to include final protective line, principal direction of fire, dead space, reading the T&E mechanism and field expedient method of laying the gun.
- 1.8.2.9. The general description and nomenclature of the AN/PVS-4 night vision device.
- 1.8.3. Explain, demonstrate and conduct practical exercises on:
 - 1.8.3.1. Range determination and lateral distance measurement.
 - 1.8.3.2. Preparing range cards.
 - 1.8.3.3. Zeroing the AN/PVS-4 night vision device.
 - 1.8.3.4. Using the AN/PVS-4 night vision device for sighting, aiming and estimating range.
- 1.8.4. Third Period -- Preparatory Marksmanship. Approximately 3 hours are needed for initial training and 2 hours for 12-month recurring training.
 - 1.8.4.1. Explain, demonstrate, and conduct practical exercises in:
 - 1.8.4.1.1. Assuming tactically sound firing positions. (**Figure 1.3. - Figure 1.6.**)
 - 1.8.4.1.2. Establishing a proper grip.
 - 1.8.4.1.3. Proper tactics/techniques of firing while wearing CWDE mask and gloves.
 - 1.8.4.1.4. Making sight adjustments.
 - 1.8.4.2. Discuss:
 - 1.8.4.2.1. Principles of aiming, proper trigger manipulation and target engagement with the M60 or M240B from a stationary and moving vehicle.
 - 1.8.4.2.2. Principles on how to zero the rear sight.
 - 1.8.4.2.3. Adjusted aiming point method of fire adjustment.
 - 1.8.4.2.4. Target analysis and common errors encountered in machine gun marksmanship.
- 1.8.5. Fourth Period -- Performance Evaluation. Approximately 3 hours are needed for initial training and 2 hours for 12-month recurring training.
 - 1.8.5.1. Prepare performance evaluation forms.
 - 1.8.5.2. Brief students on evaluation criteria.
 - 1.8.5.3. Set up weapons and equipment.
 - 1.8.5.4. Conduct performance evaluation on:

- 1.8.5.4.1. Clearing.
- 1.8.5.4.2. Half-loading (**if authorized by Technical Orders**).
- 1.8.5.4.3. Firing from the half-load (**if authorized by Technical Orders**).
- 1.8.5.4.4. Clearing from the half-load (**if authorized by Technical Orders**).
- 1.8.5.4.5. Full-loading.
- 1.8.5.4.6. Clearing from the full-load.
- 1.8.5.4.7. Barrel change.
- 1.8.5.4.8. Disassembly into major groups.
- 1.8.5.4.9. Assembly.
- 1.8.5.4.10. Function check.
- 1.8.5.4.11. Immediate action procedures.
- 1.8.5.4.12. Mounting the M60 or M240B on a tripod and vehicle.
- 1.8.5.4.13. Reading a range card and setting T&E data.
- 1.8.5.4.14. Crew Drills.

1.8.6. Fifth Period -- Live Fire and Operator Maintenance Evaluation. Approximately 17 hours are needed for initial training and 8 hours for 12-month recurring training.

- 1.8.6.1. Discuss range procedures and safety requirements for live firing.
- 1.8.6.2. Review all factors of obtaining an accurate initial burst.
- 1.8.6.3. Review immediate action procedures.
- 1.8.6.4. Conduct exercises in assuming tactically sound firing positions. (**Figure 1.3. - Figure 1.6.**)
- 1.8.6.5. Fire qualification course.
- 1.8.6.6. Evaluate trainee's proficiency in operator maintenance and function check procedures.
- 1.8.6.7. Trainees must correctly perform the function check.
- 1.8.6.8. Provide either immediate remedial training for those trainees who fail to qualify or demonstrate required proficiency in operator maintenance or notify unit training sections of the status of individuals who fail.
- 1.8.6.9. Complete applicable blocks on the AF Forms 522 and 710.

1.9. Administrative Requirements:

- 1.9.1. Reference Material:
 - 1.9.1.1. AFI 36-2226, *Combat Arms Program*.
 - 1.9.1.2. T.O. 11W2-6-4-11, *Operator's Manual M60 Machine Guns, 7.62mm* (Army TM 9-1005-224-10).

- 1.9.1.3. T.O. 11W2-6-4-12, *M60 Machine Guns, 7.62mm* (Army TM 9-1005-224-24).
- 1.9.1.4. T.O. 11W2-8-32-4, *Mount, Machine Gun, MK-64 Cradle* (Army TM 9-1010-231-13&P).
- 1.9.1.5. T.O. 11W2-8-1-322, *Machine Gun Mounts* (Army TM 9-1005-245-13&P).
- 1.9.1.6. T.O. 11W2-6-4-21, *Machine Gun, 7.62mm, M60* (Army FM 23-67).
- 1.9.1.7. TM 750-244-7 *Procedures for Destruction of Equipment (Army)*.
- 1.9.1.8. TM 11-5855-213-10, *Operator's Manual Night Vision Sight Individual Served Weapon AN/PVS-4*.
- 1.9.1.9. TM 11-5855-238-10, *Operator's Manual for Night Vision Goggles Ground Use: AN/PVS-5, AN/PVS-5A, AN/PVS-5B, AN/PVS-5C*.
- 1.9.1.10. TM 11-5855-262-10-1, *Operator's Manual Night Vision Goggle, AN/PVS-7A*.
- 1.9.1.11. T.O. 12S10-2PVS7-11, *Operator's Manual Night Vision Goggle AN/PVS-7D*.
- 1.9.1.12. TM 11-5855-301-12&P, *Operators and Unit Maintenance Manual, Light, Aiming, Infrared AN/PAQ-4B, AN/PAQ-4C*.
- 1.9.1.13. TM 750-244-2, *Procedures for Destruction of Electronics Material to Prevent Enemy Use*.
- 1.9.1.14. T.O. 11W2-6-5-2, *Technical Manual Unit and Direct Support Maintenance Manual for the M240B Medium Machine Gun*.
- 1.9.1.15. TM 11-5855-306-10, *Operator's Manual Monocular Night Vision Device (MNVD) AN/PVS-14 (5855-01-432-0524)*
- 1.9.2. Facilities Needed:
 - 1.9.2.1. Classroom equipped with chalkboard, tables and chairs.
 - 1.9.2.2. Area to conduct practical exercises in assuming firing positions.
 - 1.9.2.3. Firing range with target line at 10-meters.
 - 1.9.2.4. Full distance range.
 - 1.9.2.5. Vehicle fire range.
 - 1.9.2.6. Area for weapons cleaning.
- 1.9.3. Training Aids and Equipment:
 - 1.9.3.1. M60 or M240B with spare barrel kit, one for each two trainees.
 - 1.9.3.2. M122 or M122A1 tripod and T&E mechanism, one for each M60 or M240B.
 - 1.9.3.3. M142 and/or MK-64 gun mount, as required.
 - 1.9.3.4. Night vision device, one for each M60 or M240B.
 - 1.9.3.5. Blank firing attachment.
 - 1.9.3.6. Training charts.
 - 1.9.3.7. Overhead projector/computer system with visual slide capability.

- 1.9.3.8. Slide projector.
- 1.9.3.9. Videocassette recorder and monitor.
- 1.9.3.10. Slides and transparencies.
- 1.9.3.11. Student handouts.
- 1.9.3.12. Bandoleer (assault pack) loaded with dummy 7.62mm linked ammunition, one per M60 or M240B.
- 1.9.3.13. Empty ammo can and empty ammo case.
- 1.9.3.14. Care and cleaning equipment, as required by T.O. 11W2-6-4-11, *Operator's Manual, Machine Gun, 7.62mm M60, and 122 Tripod*.
- 1.9.3.15. Performance evaluation forms.
- 1.9.3.16. Helmet and flak vest.
- 1.9.3.17. CWDE mask and gloves.
- 1.9.3.18. Blank range cards.
- 1.9.3.19. Vehicles designated as M60 or M240B firing platform.
- 1.9.3.20. Targets, as required.
- 1.9.3.21. Illumination as required for night fire.
- 1.9.3.22. Public address system.
- 1.9.3.23. Binoculars.
- 1.9.3.24. Sound suppressors or ear plugs for instructors and trainees.
- 1.9.3.25. Eye protection for instructors is mandatory but optional for students.
- 1.9.3.26. First Aid kit.
- 1.9.3.27. Ammunition Needed: Cartridge 7.62mm linked (quantity and type required to complete applicable course of fire).
- 1.9.3.28. Combat Arms Training Simulator meeting the requirements identified in AFI 36-2226.
- 1.9.4. Documents Needed:
 - 1.9.4.1. AF Form 522, *US Air Force Ground Weapons Training Data*.
 - 1.9.4.2. AF Form 710, *Combat Arms Training Record*.
 - 1.9.4.3. Performance evaluation forms.

Figure 1.1. M60 or M240B Machine Gun Firing Requirement, AFQC Full Distance (AFQC/FD).

Order Number	Ammunition Used	Type of		Bursts Per	Qualification
Target Description/Distance	Burst Type Each Target	Load	Time	Target Type	Standard
Phase I: Bipod Practice					
1. Zeroing (500 meters)	58 (6 to 9 round bursts)	Full	N/A	4	N/A
2. Point Targets (500 meters)	36 (6 to 9 round burst)	Full	N/A	4	N/A
3. Deep Targets (300-800 meters)	90 (6 to 9 round bursts)	Half	N/A	10	N/A
4. Linear Targets with Depth (300-800 meters)	144 (6 to 9 round bursts)	Half	N/A	16	N/A
5. CWDE (300-800 meters)	36 (6 to 9 round bursts)	Half	N/A	4	N/A
364 Rounds Phase I					
Phase II: Evaluation Bipod					
1. Deep Targets (300-800 meters)	90 (6 to 9 round bursts)	Half	3 1/2 minutes	10	Each Target Hit
2. Linear Targets with Depth 300-800 Meters	144 (6 to 9 round bursts)	Half	3 minutes	16	Each Target Hit
3. CWDE (300-800 meters)	36 (6 to 9 round bursts)	Half	1 minute	4	Each Target Hit
270 Rounds Phase II					
Phase III: Practice Tripod					
1. Zeroing (500 meters)	36 (6 to 9 round bursts)	Full	N/A	4	N/A
2. Point Targets (300-800 meters)	36 (6 to 9 round bursts)	Half	N/A	4	N/A
3. Linear Targets (300-800 meters)	144 (6 to 9 round bursts)	Half	N/A	16	N/A
4. Predetermined Fire	72 (6 to 9 round bursts)	Full	N/A	8	N/A
Obtain Direction and Elevation Readings (300-800 meters)	Two bursts per reading				
288 Rounds Phase III					
Phase IV: Evaluation Tripod					
1. Deep Targets (300-800 meters)	90 (6 to 9 round bursts)	Half	3 1/2 minutes	10	Each Target Hit
2. Linear Targets with Depth (300-800 meters)	144 (6 to 9 round bursts)	Half	3 minutes	16	Each Target Hit
3. Predetermined Fire	72 (6 to 9 round bursts)	Full	N/A	8	4
Obtain Direction and Elevation Readings	Two bursts per reading				
306 Rounds Phase IV					
Phase V: Vehicle Firing					
1. Stationary Vehicle Practice 300 meters	36 (6 to 9 round bursts)	Half	N/A	4	N/A
2. Stationary Vehicle Evaluation 300 meters	36 (6 to 9 round bursts)	Half	2 minutes	4	Each Target Hit
72 Rounds Phase V					
1300 Rounds for Course					

1.10. Course Information, AFQC/FD:

1.10.1. Targets for the Course. Double "E" silhouette targets, empty 55-gallon drums, salvaged vehicles or mounds of earth can be used to represent personnel and vehicle targets.

1.10.2. Standards:

1.10.2.1. The entire course of fire is based on the students ability to fire a 6 to 9-round burst during training and is used to teach firing discipline and the tactical employment of the machine gun. In an actual real-world scenario, the shooter would continue to fire (sustained, rapid or cyclic) until the threat is eliminated.

1.10.2.2. Initial lay on all targets is midpoint. After the initial burst, the gunner will move to the closest part of the target to the gunner, then moves to the farthest point from the gunner and finally back to the midpoint. Instructors must ensure targets are large enough to allow adequate traversing and/or searching with the required number of bursts. Gunners will ensure beaten zones overlap while firing. Gunners will not fire and make T & E adjustments at the same time. This technique is used for training and simulates no known threat. In real-life situations, gunners will tactically engage the portion of the target posing the greatest threat to themselves or the gun position.

1.10.2.3. During qualification, once the student has fired at the required number of targets, any remaining ammunition will be returned to the instructor for placement back into the ammunition inventory. Ensure the AF Forms 522 and 710 reflect the correct number of rounds fired by the student.

1.10.2.4. Qualification standards are contained in the course of fire.

1.10.2.5. On all evaluation phases, if the beaten zone covers the target, it is considered a hit.

1.10.3. Course Notes:

1.10.3.1. Instructors are to teach trainees as needed during the practice phase/orders. During evaluation phases, instructors will help trainees between orders of fire, as needed, correct safety infractions and supervise how trainees apply immediate action procedures.

1.10.3.2. Assistant gunners will not be used for Phases I, II or V. On those courses where an assistant gunner is used, assistant gunners will give all fire corrections to the gunners (with the exception of zero). Ensure trainees are equipped with the appropriate tripod, T&E mechanism and spare barrel kit. Gun crews will wear a helmet, flak vest, nomex gloves and hearing protection during all firing orders. Both the gunner and assistant gunner must have the protective mask and gloves on their person during the entire course.

1.10.3.3. Sight corrections may be made at any time throughout the course.

1.10.3.4. All orders in Phases I and II are fired in the bipod mode.

1.10.3.5. On all orders, gunners will engage targets as a single gun covering the entire target.

1.10.3.6. After completing Phase I, Order 4 and Phase II, Order 2, the firing point instructor will give the command "Gas, Gas, Gas" and the gun crew will immediately put the gun on safe and don the protective mask and gloves. Gunner will then engage the area target.

1.10.3.7. Phase V is optional to fill mission training needs for units using or UTCs using vehicle mounted weapons. Implementation of this phase is at the discretion of MAJCOMs. In Phase V, gunners should use one area target at 300 meters with at least four double "E" silhouettes or

55-gallon drums. Position the vehicle parallel to the firing line with the weapon pointed down range (perpendicular to the vehicle). When conducting moving vehicle firing, the vehicle should move parallel to the firing line at a speed of 3 to 5 miles per hour (mph).

1.10.3.8. Should gunners fail to achieve a qualified score on any order, they are unqualified. However, if refired within 30 days, gunners need only refire and qualify on those orders failed. Beyond 30 days, gunner must refire entire course.

1.10.3.9. AF Form 522 need only reflect qualified "Q" or unqualified "UQ" for the entire course. However, instructors must annotate (in the remarks block of the AF Form 522) any order the student fails and does not requalify during the class to ensure only the failed order is refired IAW paragraph [1.10.3.8](#) above. A numerical score is not required in the score block of AF Forms 522 or 710.

**Figure 1.2. M60 or M240B Machine Gun AFQC 10-meter (AFQC/10M)
(See paragraph 1.11.2. Half-Loading).**

Order Number		Ammunition Used	Type of		Number of	Qualification
Target Description		Burst Type	Load	Time	Targets Engaged	Standard
	Phase I: Bipod Practice					
1.	Zeroing	6 (6 single rounds only)	Full	N/A	1	N/A
	Pasters A1	36 (6, 6-round bursts)				
2.	Point Targets	18 (6 to 9 round bursts)	Full	N/A	2	N/A
	Pasters A3 and A4					
3.	Deep Targets	90 (6 to 9 round bursts)	Half	N/A	5	N/A
	Pasters A5-A6					
4.	Linear Targets	144 (6 to 9 round bursts)	Half	N/A	8	N/A
	Pasters A7 - A8					
5.	CWDE	36 (6 to 9 round bursts)	Half	N/A	2	N/A
	Pasters B1 and B2					
		330 Rounds Phase I				
	Phase II: Evaluation Bipod.					
1.	Deep Targets	90 (6 to 9 round bursts)	Half	3 1/2 minutes	5	5 hits per target
	Pasters B5-B6					
2.	Linear Targets with Depth	144 (6 to 9 round bursts)	Half	3 minutes	8	5 hits per target
	Pasters B7-B8					
3.	CWDE	36 (6 to 9 round bursts)	Half	1 minute	2	4 hits per target
	Pasters B3 and B4					
		270 Rounds Phase II				
	Phase III: Practice Tripod					
1.	Zeroing	6 (3 single rounds each)	Full	N/A	2	N/A
	Pasters C1 and C2					
2.	Point Targets	18 (6 to 9 round bursts)	Half	N/A	2	N/A
	Pasters C3 and C4					
3.	Linear Targets	144 (6 to 9 round burst)	Half	N/A	8	N/A
	Pasters C7 - C8					
4.	Predetermined Fire	72 (6 to 9 round burst)	Full	N/A	4	N/A
	Obtain Direction and	Two bursts per reading				
	Elevation Readings					
	Pasters – Instructor Choice	240 Rounds Phase III				

Order Number	Ammunition Used	Type of		Number of	Qualification
Target Description	Burst Type	Load	Time	Targets Engaged	Standard
Phase IV: Evaluation Tripod					
1. Deep Targets	90 (6 to 9 round bursts)	Half	3 1/2 minutes	5	7 hits per target
Pasters D5-D6					
2. Linear Targets with Depth	144 (6 to 9 round bursts)	Half	3 minutes	8	7 hits per target
Pasters D7-D8					
3. Predetermined Fire	72 (6 to 9 round bursts)	Full	N/A	4	4 targets hit
Obtain Direction and	Two bursts per reading				
Elevation Readings					
Pasters - Instructor Choice					
	306 Rounds Phase IV				
Phase V: Vehicle Firing (USING BLANK ROUNDS ONLY) See 1.11.4.11.					
1. Stationary Vehicle Practice	27 (6 to 9 round bursts)	Half	N/A	1	N/A
2. Stationary Vehicle Evaluation	27 (6 to 9 round bursts)	Half	2 minutes	1	1 target hit
	54 Rounds Phase V				
	1200 Rounds for Course				

1.11. Course Information: AFQC/10M:

1.11.1. Targets for the Course. Use the 10-meter machine gun target for Phases I-IV (NSN 6920-00-078-5123). Double "E" silhouette targets, empty 55-gallon drums, salvaged vehicles or mounds of earth can be used to represent personnel and vehicle targets for Phase V (see paragraph [1.11.4.8.](#) for Phase V course notes).

1.11.2. Half-Loading: **Half loading, unloading from a half-load and clearing from a half load is only authorized per the operator's manual. Weapons not authorized the use of a half load will perform all loading operations using the full load procedures.**

1.11.3. Standards

1.11.3.1. The entire course of fire is based on the students ability to fire a 6 to 9-round burst during training and is used to teach firing discipline and the tactical employment of the machine gun. In an actual real-world scenario, the shooter would continue to fire (sustained, rapid or cyclic) until the threat is eliminated.

1.11.3.2. Initial lay on all targets is midpoint. After the initial burst, the gunner will move to the closest part of the target to the gunner, then moves to the farthest point from the gunner and finally back to the midpoint. Instructors must ensure targets are large enough to allow adequate traversing and/or searching with the required number of bursts. Gunners will ensure beaten zones over lap while firing. Gunners will not fire and make T & E adjustments at the same time. This technique is used for training and simulates no known threat. In real-life situations, gunners will tactically engage the portion of the target posing the greatest threat to themselves or the gun position.

1.11.3.3. During qualification, once the student has fired at the required number of targets, any remaining ammunition will be returned to the instructor for placement back into the ammunition inventory. Ensure the AF Forms 522 and 710 reflect the correct number of rounds fired by the student.

1.11.3.4. Qualification standards are contained in the course of fire.

1.11.4. Course Notes:

1.11.4.1. Instructors are to teach trainees as needed during the practice phase/orders. During evaluation phases, instructors will help trainees between orders of fire, as needed, correct safety infractions and supervise how trainees apply immediate action procedures.

1.11.4.2. Assistant gunners will not be used on Phases I, II or V but are mandatory for Phases III and IV. The gunner must wear a helmet, flak vest and hearing protection during all firing orders. The gunner must also have the protective mask and gloves on his or her person during the entire course.

1.11.4.3. Sight corrections and T&E adjustments (Phases III and IV) may be made at any time throughout the course.

1.11.4.4. All orders in Phases I and II are fired in the bipod mode.

1.11.4.5. Initial lay on all targets is midpoint. After the initial burst, the gunner will move to the closest part of the target to the gunner, then moves to the farthest point from the gunner and finally back to the midpoint. Instructors must ensure targets are large enough to allow adequate traversing and/or searching with the required number of bursts. Gunners will ensure beaten zones overlap while firing. Gunners will not fire and make T & E adjustments at the same time. This technique is used for training and simulates no known threat. In real-life situations, gunners will tactically engage the portion of the target posing the greatest threat to themselves or the gun position.

1.11.4.6. After completing Phase I, Order 4 and Phase II, Order 2, the firing point instructor will give the command "Gas, Gas, Gas" and the gun crew will immediately put the gun on safe, don the protective mask and gloves and then engage the next target.

1.11.4.7. Phase V is optional to fill mission training needs for units using or UTCs with vehicle mounted weapons. Implementation of this phase is at the discretion of MAJCOMs.

1.11.4.8. If required, conduct Phase V vehicle firing using blank ammunition and the Multiple Integrated Laser Engagement System (MILES) equipped weapons and targets. Use one area target at 300 meters, with at least four double "E" silhouettes or 55-gallon drums. Hang MILES harnesses over the targets or drums. Position the vehicle parallel to the firing line with the weapon pointing down range (perpendicular to the vehicle). An instructor must be available with a MILES reset key and radio. The instructor indicates target hits and resets MILES harnesses for each gunner. When conducting moving vehicle firing, the vehicle should move parallel to the firing line at a speed of 3 to 5 mph.

1.11.4.9. Should gunners fail to achieve a qualified score on any order, they are unqualified. However, if refired within 30 days, gunners need only to refire and qualify on those orders failed. Beyond 30 days, gunner must refire entire course.

1.11.4.10. AF Form 522 need only reflect qualified "Q" or unqualified "UQ" for the entire course. However, instructors must annotate (in the remarks block of the AF Form 522) any order the stu-

dent fails and does not requalify during the class to ensure only the failed order is refired IAW paragraph 1.11.4.9. above. A numerical score is not required in the score block of AF Forms 522 or 710.

Figure 1.3. Machine Gun Prone Position (Bipod).



Prone Position (Bipod). The gunner (right handed) assumes a prone position behind the M60 keeping the body in line with the barrel. The hinged shoulder rest is placed on the right shoulder. Legs are spread a comfortable distance apart with heels down and toes pointed outward. Place left hand on top of the cover and grasp the pistol grip with the right hand. Maintain a firm, steady pressure down and to the rear with both hands (pull the gun down and tightly into the shoulder). Rest cheek lightly against the stock and left hand with shoulders level and elbows an equal distance apart below the receiver of the gun. Recommend sandbagging the bipod legs. **NOTE:** Left-handed firing is unauthorized during peacetime training because of the cartridge ejection pattern and location of cover latch.

Figure 1.4. Machine Gun Prone Position (Tripod).



Prone Position (Tripod). The gunner (right handed) assumes a prone position behind the M60 as in the bipod prone position except that the hinged shoulder rest is not used. Grasp the pistol grip with the right hand. With the left-hand palm down, grasp the elevating handwheel. Maintain a firm downward and rearward pressure with both hands. Rest the cheek (optional) lightly against the cover. Keep elbows inside the tripod legs, but not touching the tripod. Place right shoulder lightly against the stock but do not apply pressure as this could move the gun out of alignment. Recom-

mend sandbagging the tripod legs. **NOTE:** Left-handed firing is unauthorized during peacetime training because of the cartridge ejection pattern (location of cover latch) and all T&E adjustments are made with the left hand.

Figure 1.5. HMMWV Mounted Machine Gun Position with M142.

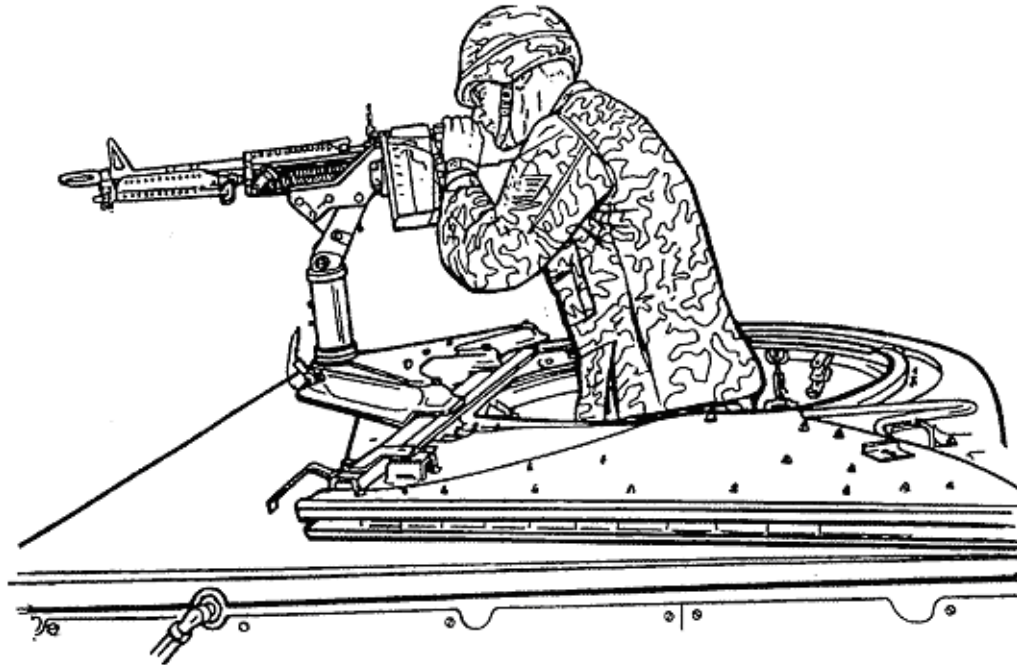
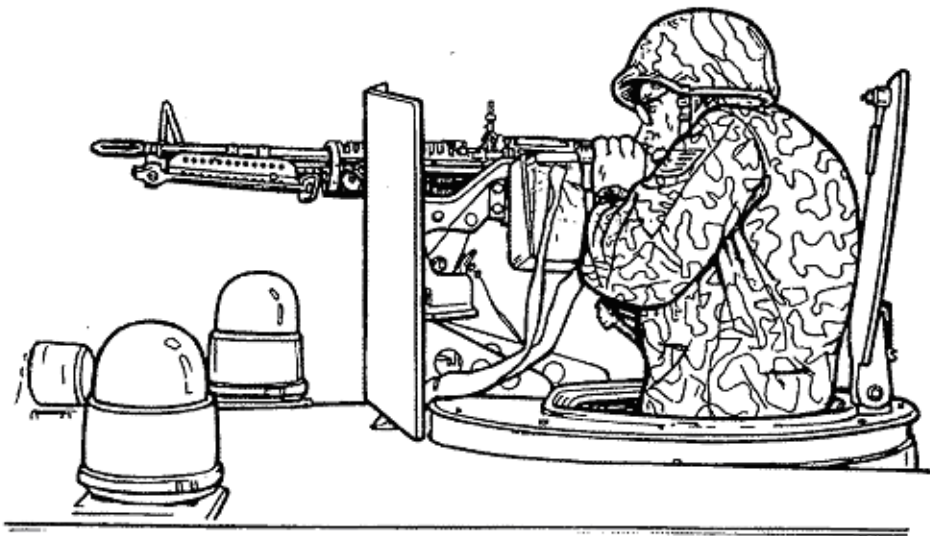


Figure 1.6. Peacekeeper Mounted Machine Gun Position.



Chapter 2

MK-19 MACHINE GUN TRAINING PROGRAM

2.1. MK-19 Machine Gun Air Force Qualification Course (AFQC). This course provides the minimum training, evaluation and the TTPs required to ensure the gunners ability to tactically employ the MK-19. Assistant machine gunners must complete the same training program and meet the same qualification standards as primary machine gunners.

2.2. Training Overview:

2.2.1. Initial Training. This is the trainee's first participation in the MK-19 Qualification Training Program. Initial training consists of classroom instruction, qualification on the required evaluation phases of the AFQC ([Figure 2.1.](#)) and passing the performance evaluations. The AF Form 522 will reflect a 12-month qualification.

2.2.2. Recurring Training -- 12-Month. This is qualification training after initial qualification. It consists of classroom instruction, qualification on the required evaluation phases of the AFQC ([Figure 2.1.](#)) and passing the performance evaluations. Evaluation is mandatory on an annual basis. The AF Form 522 will reflect a 12-month qualification.

2.2.3. Mechanical Recurring Training -- 6-Month. This is weapon operator skill re-certification training. This training consists of classroom instruction and passing all the performance evaluations. **This evaluation is mandatory during the 6th month after initial or recurring training and should not be accomplished prior to the 6th month (Individual Unit Commanders may authorize early mechanical training to meet AEF requirements).** Personnel who do not complete mechanical training during the 6th month after live-fire qualification are unqualified until they complete the 6th month mechanical training. Once training is complete, the original 12-month qualification expiration date will be reinstated. Students will be given the performance tests and those who fail the performance tests will be given remedial instruction and retested.

2.2.4. Remedial Training. This is the minimum training needed to correct deficiencies causing an individual to fail an evaluation.

2.2.5. Performance Evaluations. Performance evaluations, located in lesson plans, consist of weapon operator skills certification. Evaluation is mandatory during initial, 12-month recurring and 6-month mechanical recurring training.

2.2.6. Unit Training. To help maintain the gunner's proficiency, units should provide refresher training on operator skills and knowledge. Units should conduct this training before exercises and deployments.

2.3. Instructor Guidelines:

2.3.1. Classroom. Instructors will help trainees during portions of training requiring physical handling of weapons. They will supervise, evaluate, conduct performance evaluations and assist trainees during operator maintenance (care and cleaning). See AFI 36-2226 for student to instructor ratios.

2.3.2. Range. Instructors will supervise, assist, coach and teach the tactics, techniques and procedures needed during prefire set-up, practice and evaluation phases of fire. Each firing point instructor conducts the course of fire, to include monitoring time limits, at the firing point. To ensure safe range

operations, close communication is essential between the range safety instructor and all point instructors. See AFI 36-2226 for student to instructor ratios.

2.3.3. Range Safety Instructor/Tower Operator. This instructor monitors all firing points and has responsibility and authority for safe and effective range operations during range training sessions. The instructor may work directly on the firing line if a fixed control tower is not on the range. **NOTE:** This position is in addition to each firing point instructor. The Range Safety Instructor may not simultaneously serve as a firing point instructor or live-fire, unless relieved of Range Safety Instructor duties. See AFI 36-2226 for exceptions.

2.4. MK-19 Qualification Plan of Instruction. The plan in the following paragraphs is intended to provide instruction standardization. This program is mandatory for initial and recurring training. Remedial training is in-depth, concentrating on known problems. Trainees must meet and be evaluated to the performance standards of these training objectives. **NOTE:** Training times will vary depending on class size, trainee experience level, range location, etc. Approximate training times for this program are:

2.4.1. Initial training -- 30 hours.

2.4.2. Recurring training (12 months) -- 22 hours.

2.4.3. Mechanical Recurring training (6 months) – as needed for the student to successfully complete the required performance tests.

2.4.4. Remedial training -- as needed.

2.5. Training Goal. The training goal is to instill confidence in the trainee to develop and maintain the capability to use the MK-19 against enemy targets and maintain the weapon to the level authorized for the operator. With the exception of operator maintenance, trainees must perform all evaluated tasks without assistance.

2.6. Training Objectives. The training objectives required for successful completion of this program are listed in [Table 2.1](#).

2.6.1. Intermediate Training Objectives. Trainees must be familiar with:

2.6.1.1. Roles of the MK-19.

2.6.1.2. Safety rules and procedures.

2.6.1.3. Characteristics, nomenclature and general data.

2.6.1.4. Range determination techniques.

2.6.1.5. Lateral distance measurement techniques.

2.6.1.6. Techniques of fire.

2.6.1.7. Classes of fire and types of targets.

2.6.1.8. Zeroing rear sight.

2.6.1.9. Sight adjustments.

2.6.1.10. Adjusted aiming point method of fire.

2.7. Recommended Sequence of Events:

2.7.1. First Period -- Orientation and Mechanical Training. Approximately 14 hours are needed for initial, 10 hours for 12-month recurring and as needed for 6-month recurring training.

2.7.1.1. Prepare all required forms and documents.

2.7.1.2. Discuss:

2.7.1.2.1. MK-19 weapons safety.

2.7.1.2.2. MK-19 roles.

2.7.1.2.3. MK-19 general description and characteristics.

2.7.1.2.4. MK-19 general nomenclature.

2.7.1.2.5. Ammunition types, care, handling and preserving ammunition for the MK-19.

2.7.1.3. Explain, demonstrate and conduct practical exercises on:

2.7.1.3.1. Clearing the MK-19.

2.7.1.3.2. Disassembling the MK-19.

2.7.1.3.3. Assembling the MK-19.

2.7.1.3.4. Function checking the MK-19.

2.7.1.3.5. Mounting the MK-19 and T&E on the M3 tripod and vehicle.

2.7.1.3.6. MK-19 loading, unloading (half-and full-load), reloading and clearing.

2.7.1.3.7. Care, cleaning, lubricating and operator inspection procedures for the MK-19.

2.7.1.3.8. Stoppages, malfunctions and immediate action procedures.

2.7.1.3.9. Destruction procedures for the MK-19.

2.7.2. Second Period -- Preparatory Marksmanship and Crew Training. Approximately 8 hours are needed for initial, 6 hours for 12-month recurring and as needed for 6-month mechanical recurring training.

2.7.2.1. Discuss:

2.7.2.1.1. Target acquisition.

2.7.2.1.2. Target identification.

2.7.2.1.3. Range determination.

2.7.2.1.4. Fire commands.

2.7.2.2. Explain/demonstrate firing positions.

2.7.2.3. Explain how a tactically sound position, grip, sight alignment, sight picture, trigger manipulation and zeroing or round sensing ensure effective burst-on-target.

2.7.2.4. Explain, demonstrate and conduct practical exercises on:

2.7.2.4.1. Characteristics of fire and classes of fire with respect to the gun and target.

2.7.2.4.2. Using the T&E mechanism.

2.7.2.4.3. Range card preparation and use.

2.7.2.4.4. Crew drill training.

2.7.2.4.5. Assuming tactically sound firing positions (**Figure 2.2.** and **Figure 2.3.**).

2.7.3. Third Period -- Performance Evaluations. Approximately 2 hours are needed for initial, 12-month recurring and as needed for 6-month mechanical recurring training.

2.7.3.1. Prepare performance evaluation forms.

2.7.3.2. Brief students on evaluation criteria.

2.7.3.3. Set up weapons and equipment.

2.7.3.4. Conduct performance evaluation on:

2.7.3.4.1. Mounting MK-19 on M3 tripod and vehicle mount.

2.7.3.4.2. Attaching T&E mechanism.

2.7.3.4.3. Clearing.

2.7.3.4.4. Disassembly.

2.7.3.4.5. Inspection of MK-19.

2.7.3.4.6. Assembly.

2.7.3.4.7. Function Check.

2.7.3.4.8. Half Loading.

2.7.3.4.9. Full Loading.

2.7.3.4.10. Clearing from the full-load.

2.7.3.4.11. Reading a range card and setting the data on a T&E.

2.7.3.4.12. Immediate Action Drills.

2.7.3.4.13. Crew Drills.

2.7.4. Fourth Period -- 400 Meter Zero Teaching Practice Fire Training. Approximately 2 hours are needed for initial and 12-month recurring training.

2.7.4.1. Teach safety requirements for live-fire training.

2.7.4.2. Explain range procedures.

2.7.4.3. Review marksmanship fundamentals.

2.7.4.4. Review procedures for clearing stoppages during live-fire training.

2.7.4.5. Conduct practice fire. Objective is to prepare each trainee to confidently and effectively fire MK-19 before evaluation phases.

2.7.5. Fifth Period -- Live Fire and Operator Maintenance Evaluation. Approximately 4 hours are needed for initial and 12-month recurring training.

2.7.5.1. Brief trainees on evaluation criteria.

2.7.5.2. Conduct live-fire evaluation phases. Trainees must qualify without instructor assistance.

2.7.5.3. Instructors will score evaluation phases.

2.7.5.4. Evaluate the trainee's proficiency in operator maintenance and function check procedures.

2.7.5.5. Trainees must correctly perform function check.

2.7.5.6. Provide either immediate remedial training for those trainees who fail to qualify or fail to demonstrate proficiency in operator maintenance or notify unit training section of the status of individuals who fail.

2.7.5.7. Complete applicable blocks on AF Forms 522 and 710.

Table 2.1. MK-19 Machine Gun Training Objectives/Intermediate Training Objectives (ITO).

	Objective	Condition	Standard
		Given:	
1.	Operate MK-19.	MK-19 with dummy ammunition.	Operate MK-19.
1.1	Mount the MK-19 on a tripod and vehicle.	MK-19, tripod, vehicle and necessary mounting hardware.	Mount the MK-19 on a tripod and vehicle.
1.2	Clear the MK-19.	MK-19 mounted on an M3 tripod or vehicle.	Clear the MK-19.
1.3	Half-load and unload the MK-19.	MK-19 mounted on an M3 tripod or vehicle, dummy ammunition.	Half-load and unload the MK-19.
1.4	Full-load and unload the MK-19.	MK-19 mounted on an M3 tripod or vehicle, dummy ammunition.	Full-load and unload the MK-19.
1.5	Perform immediate action procedures.	MK-19 mounted on an M3 tripod or vehicle.	Perform immediate action procedures.
1.6	Perform a preventative maintenance inspection.	MK-19 mounted on an M3 tripod.	Perform a preventative maintenance (refire) inspection on the MK-19.
1.7	Zero and attach the traversing and elevating (T&E) mechanism.	MK-19 mounted on an M3 tripod, T&E mechanism.	Zero and attach the T&E mechanism to the MK-19 and tripod, and MK-19 and vehicle mount.
1.8	Mount MK-19 on a vehicle mount.	MK-19 and a MK-64 mount.	Mount MK-19 on MK-64.
1.9	Place MK-19 in and out of action.	MK-19, dummy ammunition and associated equipment.	Place the MK-19 in and out of action.
2.	Performance evaluation.	MK-19.	Successfully complete all phases of performance evaluation.

	Objective	Condition	Standard
		Given:	
3.	Demonstrate effective techniques of fire.	MK-19 with required ammunition and equipment and a firing range of sufficient target distances.	Fire with sufficient accuracy to hit targets within range and capabilities of MK-19 and qualify on appropriate live-fire orders.
ITO			
3.1	Zero the MK-19.	MK-19 mounted on an M3 tripod and ammunition.	Fire the practice phase and zero the machine gun.
3.2	Qualify on the MK-19.	MK-19, M3 tripod, vehicle mount and ammunition.	Qualify on all required phases.
3.3	Prepare range cards.	MK-19 mounted on an M3 tripod, T&E mechanism, blank range card and ammunition.	Prepare a range card and qualify on the appropriate phase of fire.
4.	Perform operator maintenance.	MK-19, associated equipment, cleaning and lubricating supplies.	Clean, inspect, and lubricate the MK-19.
ITO			
4.1	Disassemble the MK-19.	MK-19	Disassemble the MK-19.
4.2	Clean, inspect, and lubricate the MK-19 and associated equipment.	Disassembled MK-19, required equipment, cleaning and lubricating supplies.	Clean, inspect and lubricate the MK-19 and required equipment.
4.3	Assemble the MK-19.	MK-19.	Assemble the MK-19.
4.4	Function check the MK-19.	MK-19.	Function check the MK-19

2.8. Administrative Requirements:

2.8.1. Reference Material:

2.8.1.1. AFI 36-2226, *The Combat Arms Program*.

2.8.1.2. T.O. 11W2-5-16-1, *Operator's Manual and Components List, Machine Gun 40mm, MK-19 Mod 3* (Army TM 9-1010-230-10).

2.8.1.3. T.O. 11W2-5-16-2, *Organizational and Intermediate Maintenance Manual, Including Repair Parts List, Machine Gun, 40mm, MK-19 Mod 3* (Army TM 9-1010-230-10).

2.8.1.4. T.O. 11W2-8-32-4, *Mount, Machine Gun, MK-64 Cradle* (Army TM 9-1010-231-13&P).

2.8.1.5. T.O. 11W2-8-1-322, *Machine Gun Mounts* (Army TM 9-1005-245-13&P).

2.8.1.6. FM 23-27, *MK-19 40mm Grenade Machine Gun Mod 3* (Army).

2.8.1.7. TM 750-244-7, *Procedures for Destruction of Equipment* (Army).

2.8.2. Facilities Needed:

2.8.2.1. Classroom equipped with chalkboard and one table and chair per trainee.

2.8.2.2. Impact firing range with target distances of 300 meters to 1500 meters.

2.8.2.3. Weapon cleaning area.

2.8.3. Training Aids and Equipment:

2.8.3.1. MK-19 with MK-64 cradle mount, M3 tripod, universal pintle adapter, vehicle mount, T&E mechanism, two 9/16" wrenches, ammunition container mounting bracket, ammunition container, preprinted range card and compass.

2.8.3.2. Belt of dummy ammunition (one per weapon).

2.8.3.3. Training charts.

2.8.3.4. Overhead projector/computer system with visual slide capability.

2.8.3.5. Slide projector.

2.8.3.6. Video cassette recorder and monitor.

2.8.3.7. Slides and transparencies.

2.8.3.8. Care and cleaning equipment as required.

2.8.3.9. Student handout materials.

2.8.3.10. Public address system.

2.8.3.11. Sound suppressors or ear plugs for instructors and trainees.

2.8.3.12. Eye protection for instructors is mandatory. Eye protection is optional but strongly recommended for trainees.

2.8.3.13. Flak vest and helmet (one each per trainee firing or assisting).

2.8.3.14. First aid kit.

2.8.3.15. Combat Arms Training Simulator meeting the requirements identified in AFI 36-2226.

2.8.4. Documents Needed:

2.8.4.1. AF Form 522, *US Air Force Ground Weapons Training Data*.

2.8.4.2. AF Form 710, *Combat Arms Training Record*.

2.8.4.3. Performance evaluation forms.

2.8.5. Ammunition Needed. Cartridge, 40mm practice as required.

Figure 2.1. Firing Requirements, MK-19 Machine Gun Air Force Qualification Course.

<u>Order Number</u>	<u>Ammunition and Fire Control</u>	<u>Distance (Meters)</u>	<u>Target Description</u>
Phase I: Instruction and Practice--Tripod with gun cradle and T&E.			
1. Zeroing	24 (3 to 5 round bursts)	500	Zero
	24 Total Rounds for Phase I		
Phase II: Instruction and Practice--Tripod with gun cradle and T&E or Static Vehicle with T&E.			
1.	30 (3 to 5 round bursts)	500	#1
2.	30 (3 to 5 round bursts)	800	#2
3.	30 (3 to 5 round bursts)	1000	#3
4	30 (3 to 5 round bursts)	1500	#4
	120 Total Rounds for Phase II		
Phase III: Evaluation-- Static Vehicle with T&E.			
1.	12 (3 to 5 round bursts)	500	#1
2.	12 (3 to 5 round bursts)	800	#2
3.	12 (3 to 5 round bursts)	1000	#3
4.	12 (3 to 5 round bursts)	1500	#4
	48 Total Rounds for Phase III		
Phase IV: Familiarization-- Moving Vehicle, Free Gun.			
1.	12 (3 to 5 round bursts)	500 to 800	See course notes
2.	12 (3 to 5 round bursts)	500 to 800	See course notes
3.	12 (3 to 5 round bursts)	500 to 800	See course notes
4.	12 (3 to 5 round bursts)	500 to 800	See course notes
	48 Total Rounds for Phase IV		

240 Total Rounds for Course**2.9. Course Information, MK-19 AFQC.****2.9.1. Targets for the Course:**

2.9.1.1. Zero Target. Use a 3 meters by 3 meters reinforced panel or target of comparable size, preferably of metal construction. Example: refuse dumpster, 55-gallon drums, armor plating, etc.

2.9.1.2. Target #1, Single Vehicle. Use a medium-size vehicle, approximately 8 meters by 3 meters. Other material such as 55-gallon drums, large vehicle tires or aircraft tires, etc., may be used to simulate a single-vehicle size target.

2.9.1.3. Target #2, Single Vehicle With Personnel. Use one vehicle-size target, 8 meters by 3 meters, and several (7 to 10) personnel size targets. Personnel targets will be approximately 2 meters high by 1 meter wide. Place personnel targets around the vehicle on the firing line side to define a 30-meter target area.

2.9.1.4. Target #3, Line of Troops. Use several (15 to 20) personnel size targets (2 meters by 1 meter). The size of the "Line of Troops" target area is 60 meters by 5 meters. Place targets in linear or semicircle configuration.

2.9.1.5. Target #4, Vehicle Convoy. Use at least three large vehicle-size targets. The length of the "convoy" target area is 90 meters.

2.9.1.6. Optional Moving Vehicle Phase Targets. This is a shoot on the move phase. A moving vehicle range may be superimposed on an existing range. If a separate area is used, construct targets according to the description of target 2 through target 5. Four targets are required with distances varying from 300 meters to 800 meters. Plainly mark the driving course where firing is permitted. For example, place traffic cones along the portion of the course where firing is permitted. The gunner will only fire upon the command of the instructor. The driver, assistant gunner (instructor) and the gunner are encouraged to work as a mobile fire team to identify targets, determine range and identify kills or misses. If the driving course is an improved and maintained driving surface, vehicle speed will not exceed 10 mph. If driving surface is unimproved and rough, vehicle speed will not exceed 5 mph. **NOTE:** Present range design and target configuration may vary from those described for this phase. Do not reconstruct or make major modifications solely for the purpose of this phase of fire if present range configuration meets the intent of this phase.

2.9.2. Standards:

2.9.2.1. Phase II. All four targets should be effectively engaged within 8 minutes. This time includes reloading. All four targets should have at least two hits each.

2.9.2.1.1. Target #1. Desired minimum of two hits within the 5-meter kill radius.

2.9.2.1.2. Target #2. Desired minimum of two hits within the 5-meter kill radius.

2.9.2.1.3. Target #3. Desired minimum of two hits within the 15-meter casualty radius.

2.9.2.1.4. Target #4. Desired minimum of two hits within the 15-meter casualty radius.

2.9.2.2. Evaluation Phase III. A minimum of one hit per target within the 15-meter casualty radius within 5 minutes. All four targets must have at least one hit each.

2.9.2.3. Familiarization Phase IV. Desired minimum of one hit per target within the 15-meter casualty radius. All four targets should have at least one hit each.

2.9.3. Course Notes:

2.9.3.1. Phase I through IV of the AFQC will be completed for initial training conducted at Air Education and Training Command (AETC) formal courses. The AETC formal course will conduct moving vehicle training if the designated range facility can accommodate this phase of training.

2.9.3.2. Implementation of moving vehicle training is at the discretion of the MAJCOM.

2.9.3.3. If evaluation Phase III or Phase IV are used, they become an integral part of qualification training and gunners must meet the standards of these phases to be qualified.

2.9.3.4. Gunners must qualify on phase III. If the gunners fail to meet the minimum standards they are unqualified with the weapon. Instructors may immediately refire an individual on phase III if a gunner failed; however, if the gunner fails to qualify after remedial training, the gunner is unqualified and must be totally retrained to meet all standards of 12-month recurring training.

2.9.3.5. Instructors will not teach or coach during actual firing of the evaluation phase; however, the guncrew should be encouraged to work as a team for maximum effectiveness during firing and instructors will provide assistance between orders of fire as needed. Instructors will correct safety infractions and supervise the application of immediate action procedures by the guncrew if they experience stoppages.

2.9.3.6. All orders of fire will be fired using training practice ammunition.

2.9.3.7. The suppression stop on the cradle mount will be adjusted to prevent rounds from impacting closer than 310 meters to the weapon.

2.9.3.8. Trainees will wear flak vests and helmets while firing.

2.9.3.9. Hearing and eye protection are mandatory for all personnel on the firing line.

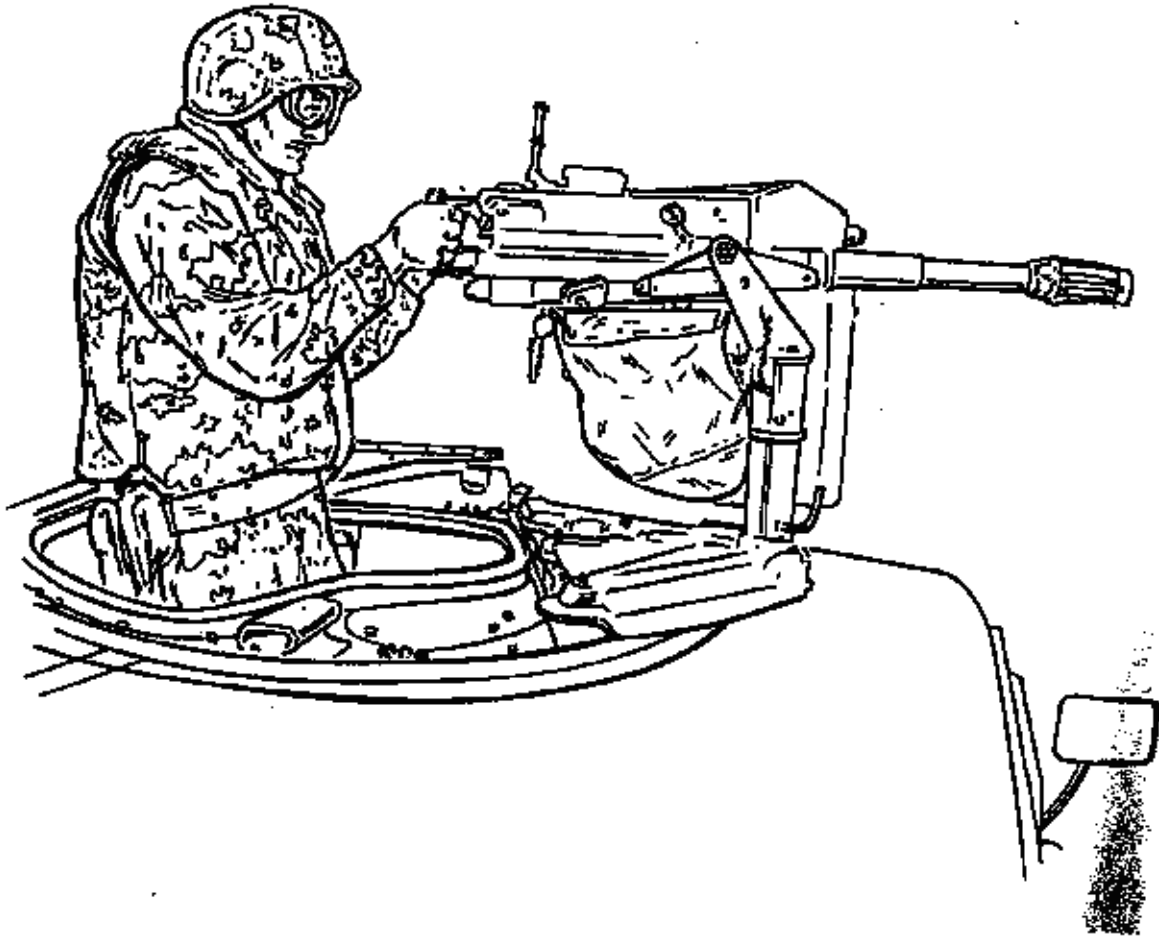
2.9.3.10. During qualification, once the student has fired at the required number of targets, any remaining ammunition will be returned to the instructor for placement back into the ammunition inventory. Ensure the AF Forms 522 and 710 reflect the correct number of rounds fired by the student.

Figure 2.2. MK-19 Machine Gun Tripod Firing Position.



Tripod Firing Position. When firing from a tripod, sit directly behind the gun between the trail legs of the tripod. Extend legs under the tripod, cross them or brace both feet on the tripod.

Figure 2.3. MK-19 Machine Gun Vehicle Firing Position.



Vehicle Firing Position. When firing from a vehicle, stand directly behind the gun with both hands on the control grips and thumbs resting on the trigger. Keep elbows against body and body forward help to brace the gun.

Chapter 3

M2 MACHINE GUN TRAINING PROGRAM

3.1. M2 Machine Gun Air Force Qualification Course (AFQC). This course provides the minimum training, evaluation and the TTPs required to ensure the gunners ability to tactically employ the M-2. Assistant machine gunners must complete the same training program and meet the same qualification standards as primary machine gunners.

3.2. Training Overview:

3.2.1. Initial Training. This is the trainee's first participation in the M2 Training Program. Initial training consists of classroom instruction, passing the performance evaluations and qualification on the required phases of the AFQC (**Figure 3.1.**). The AF Form 522 will reflect a 12-month qualification.

3.2.2. Recurring Training -- 12-Month. This is qualification training after initial qualification. It consists of classroom instruction, passing the performance evaluations and qualification on the required phases of the AFQC (**Figure 3.1.**). Evaluation is mandatory on an annual basis. The AF Form 522 will reflect a 12-month qualification.

3.2.3. Mechanical Recurring Training -- 6-Month. This is weapon operator skill re-certification training. This training consists of classroom instruction and passing all the performance evaluations. **This evaluation is mandatory during the 6th month after initial or recurring training and should not be accomplished prior to the 6th month (Individual Unit Commanders may authorize early mechanical training to meet AEF requirements).** Personnel who do not complete mechanical training during the 6th month after live-fire qualification are unqualified until they complete the 6th month mechanical training. Once training is complete, the original 12-month qualification expiration date will be reinstated. Students will be given the performance tests and those who fail the performance tests will be given remedial instruction and retested.

3.2.4. Remedial Training. This is the minimum training needed to correct deficiencies causing an individual to fail an evaluation.

3.2.5. Performance Evaluations. Performance evaluations, located in lesson plans, consist of weapon operator skills certification. Evaluation is mandatory during initial, 12-month and 6-month recurring training.

3.2.6. Unit Training. To help maintain guncrew proficiency, units should provide refresher training on operator skills and knowledge. Units should conduct this training before exercises and deployments.

3.3. Instructor Guidelines:

3.3.1. Classroom. Instructors will help trainees during portions of training requiring physical handling of weapons. They will supervise, evaluate, conduct performance evaluations and assist trainees during operator maintenance (care and cleaning). See AFI 36-2226 for student to instructor ratios.

3.3.2. Range. Instructors will supervise, assist, coach and teach the tactics, techniques and procedures as needed during prefire set-up, practice and evaluation phases of fire. Each firing point instructor conducts the course of fire, to include monitoring time limits, at the firing point. To ensure safe range operations, close communication is essential between the range safety instructor and all point instructors. See AFI 36-2226 for student to instructor ratios.

3.3.3. Range Safety Instructor/Tower Operator. This instructor monitors all firing points and has responsibility and authority for safe and effective range operations during range training sessions. The instructor may work directly on the firing line if a fixed control tower is not on the range. **NOTE:** This position is in addition to each firing point instructor. The Range Safety Instructor may not simultaneously serve as a firing point instructor or live-fire, unless relieved of Range Safety Instructor duties. See AFI 36-2226 for exceptions.

3.4. M2 Qualification Plan of Instruction. The plan in the following paragraphs is intended to provide instruction standardization. This program is mandatory for initial and recurring training. Trainees must meet and be evaluated to the performance standards of these training objectives. **NOTE:** Training times will vary depending on class size, trainee experience level, range location, etc. Approximate training times for this program are:

- 3.4.1. Initial training -- 40 hours.
- 3.4.2. Recurring training (12-month) -- 32 hours.
- 3.4.3. Mechanical Recurring training (6-month) -- as needed for the student to successfully complete the required performance tests.
- 3.4.4. Remedial training -- as needed.

3.5. Training Goal. The training goal is to instill confidence in the trainee to develop and maintain the capability to successfully use the M2 against enemy targets and maintain the weapon to the level authorized for the operator. With the exception of operator maintenance, trainees must perform all evaluated tasks without assistance.

3.6. Training Objectives. The training objectives required for successful completion of this program are listed in [Table 3.1](#).

3.6.1. Intermediate Training Objectives. Trainees must be familiar with:

- 3.6.1.1. Safety rules and procedures.
- 3.6.1.2. Characteristics, nomenclature and types of ammunition.
- 3.6.1.3. Methods of destruction.
- 3.6.1.4. Stoppages and malfunctions.
- 3.6.1.5. Roles of the machine gun.
- 3.6.1.6. Classes of fire and types of targets.
- 3.6.1.7. Range determination.
- 3.6.1.8. Applying overhead fire.
- 3.6.1.9. Zeroing the rear sight.
- 3.6.1.10. Sight adjustments.
- 3.6.1.11. Adjusted aiming point method.
- 3.6.1.12. Alternate methods of laying the gun.

Table 3.1. M2 Machine Gun Training Objectives/Intermediate Training Objectives (ITO).

	Objective	Condition	Standard
		Given:	
1.	Operate M2.	M2 with dummy ammunition.	Operate M2.
ITO			
1.1	Mount the M2 on the M3 tripod and vehicle.	M2, vehicle and M3 tripod.	Mount the M2 on a tripod and vehicle.
1.2	Clear the M2.	M2 mounted on an M3 tripod.	Clear the M2.
1.3	Set headspace and timing on the M2.	M2 mounted on an M3 tripod and a set of timing and headspace gauges.	Set headspace and timing on the M2.
1.4	Half-load and unload the M2.	M2 mounted on an M3 tripod and dummy ammunition.	Half-load and unload the M2.
1.5	Full-load and unload the M2.	M2 mounted on an M3 tripod and dummy ammunition.	Full-load and unload the M2.
1.6	Perform immediate action procedures.	M2 mounted on an M3 tripod.	Perform immediate action procedures.
1.7	Perform a preventative maintenance inspection.	M2 mounted on an M3 tripod.	Perform a preventative maintenance (prefire) inspection on the M2.
1.8	Zero and attach the T&E mechanism.	M2 mounted on an M3 tripod and T & E mechanism.	Zero and attach the T&E mechanism to the M2 and M3 tripod.
1.9	Mount the M2 on a vehicle mount.	M2 and MK-64 mount.	Mount the M2 on a MK-64.
1.10	Place the M2 in and out of action.	M2 and dummy ammunition.	Place the M2 in and out of action.
2.	Performance evaluations.	M2, M3 tripod, dummy ammunition, range card and a blank performance evaluation form.	Successfully complete all phases of the performance evaluation within the prescribed time limits.
3.	Demonstrate effective techniques of fire.	M2 with required ammunition and equipment and a firing range of sufficient target distances.	Fire M2 with sufficient accuracy to hit targets within range and capabilities of M2 and qualify on appropriate live-fire orders.
ITO			
3.1	Zero the M2.	M2 mounted on an M3 tripod and ammunition.	Fire the practice phase, and zero the M2.
3.2	Qualify on the M2.	M2 mounted on an M3 tripod and ammunition.	Qualify on all required phases.

	Objective	Condition	Standard
		Given:	
3.3	Prepare range cards.	M2 mounted on an M3 tripod, T&E mechanism, blank range card and ammunition.	Prepare a range card and qualify on the appropriate phase of fire.
4.	Perform operator maintenance.	M2, associated equipment, cleaning and lubricating supplies.	Clean, inspect, and lubricate the M2 and associated equipment.
ITO			
4.1	Disassemble the M2.	M2	Disassemble the M2.
4.2	Clean, inspect, and lubricate the M2 and equipment.	Disassembled M2, required equipment, cleaning and lubricating supplies.	Clean, inspect, and lubricate the M2 and required equipment.
4.3	Assemble the M2.	M2	Assemble the M2.

3.7. Recommended Sequence of Events.

3.7.1. First Period -- Orientation and Mechanical Training. Approximately 16 hours are needed for initial, 12 hours for 12-month recurring and as needed for the 6-month mechanical recurring training.

3.7.1.1. Prepare all required forms and documents.

3.7.1.2. Discuss:

3.7.1.2.1. M2 weapon safety.

3.7.1.2.2. M2 general description and characteristics.

3.7.1.2.3. Methods and procedures used to destroy the M2 to prevent its use by the enemy.

3.7.1.2.4. Ammunition types, care, handling and preservation of ammunition for the M2.

3.7.1.2.5. Stoppages, immediate action and remedial action.

3.7.1.2.6. M2 general nomenclature.

3.7.1.2.7. M3 tripod and T&E mechanism general description and nomenclature.

3.7.1.3. Explain, demonstrate, and conduct practical exercises on:

3.7.1.3.1. Immediate action procedures.

3.7.1.3.2. Clearing of the M2.

3.7.1.3.3. Disassembly of the M2.

3.7.1.3.4. Assembly of the M2.

3.7.1.3.5. Setting headspace and timing the M2.

3.7.1.3.6. Proper care, cleaning and lubrication of the M2 and its equipment.

3.7.1.3.7. Zeroing, attaching and operating the T&E mechanism.

- 3.7.1.3.8. Loading (half-load), unloading, reloading and clearing the M2.
- 3.7.1.3.9. Prefiring inspection of the M2 and equipment.
- 3.7.1.3.10. Placing the M2 into action.
- 3.7.1.3.11. Mounting and removing the M2 using vehicle mounts.
- 3.7.2. Second Period -- Effective Techniques of Fire. Approximately 6 hours are needed for initial, 6 hours for 12-month recurring and as needed for the 6-month mechanical recurring training.
 - 3.7.2.1. Discuss:
 - 3.7.2.1.1. M2 roles.
 - 3.7.2.1.2. M2 characteristics of fire.
 - 3.7.2.1.3. M2 classes of fire.
 - 3.7.2.2. Explain, demonstrate and conduct practical exercises on range determination and lateral distance measurement.
 - 3.7.2.3. Discuss:
 - 3.7.2.3.1. Characteristics of overhead fire.
 - 3.7.2.3.2. Principles of fire and types of targets to be engaged by the M2.
 - 3.7.2.3.3. Technique of engaging visible targets during periods of limited visibility to include types of targets, fire control and target engagement.
 - 3.7.2.3.4. Techniques of delivering preplanned fire during periods of limited visibility to include grazing fire, fire control, methods of laying the gun and night vision equipment.
 - 3.7.2.3.5. Techniques of predetermined fires to include final protective line, principal direction of fire, dead space and reading the T&E mechanism.
 - 3.7.2.4. Explain, demonstrate and conduct practical exercises on preparation of range cards.
- 3.7.3. Third Period -- Preparatory Marksmanship. Approximately 4 hours are needed for initial and 2 hours for 12-month recurring training.
 - 3.7.3.1. Explain, demonstrate and conduct practical exercises on:
 - 3.7.3.1.1. Assuming tactically sound firing positions (**Figure 3.2.** - **Figure 3.4.**).
 - 3.7.3.1.2. Establishing proper grip.
 - 3.7.3.2. Discuss principles of:
 - 3.7.3.2.1. Aiming.
 - 3.7.3.2.2. Proper trigger manipulation.
 - 3.7.3.2.3. How to zero the rear sight.
 - 3.7.3.2.4. How sight adjustments are made.
 - 3.7.3.2.5. Adjusted aiming point method of fire adjustment.
 - 3.7.3.3. Discuss target analysis and common errors encountered in machine gun marksmanship.

3.7.3.4. Explain, demonstrate and conduct practical exercises on proper techniques of firing while wearing the CWDE mask and gloves.

3.7.3.5. Discuss the principles of target engagement with the M2 from a stationary and moving vehicle.

3.7.4. Fourth Period -- Performance Evaluations. Approximately 4 hours are needed for initial, 12-month recurring and as needed for the 6-month mechanical recurring training.

3.7.4.1. Prepare performance evaluation forms.

3.7.4.2. Brief students on evaluation criteria.

3.7.4.3. Set up weapons and equipment.

3.7.4.4. Conduct performance evaluation on:

3.7.4.4.1. Clearing.

3.7.4.4.2. Half-loading.

3.7.4.4.3. Firing from the half-load.

3.7.4.4.4. Clearing from the half-load.

3.7.4.4.5. Disassembly.

3.7.4.4.6. Assembly.

3.7.4.4.7. Setting headspace and timing.

3.7.4.4.8. Immediate action procedures.

3.7.4.4.9. Reading T&E data from a prepared range card and setting the data on the T&E and traversing bar.

3.7.5. Fifth Period -- Live Fire and Operator Maintenance Evaluation. Approximately 10 hours are needed for initial and 12-month recurring training.

3.7.5.1. Discuss range procedures.

3.7.5.2. Discuss safety requirements for live firing.

3.7.5.3. Review all factors of obtaining an accurate initial burst.

3.7.5.4. Review immediate action procedures.

3.7.5.5. Conduct exercises in assuming tactically sound firing positions (**Figure 3.2. - Figure 3.4.**).

3.7.5.6. Fire qualification course.

3.7.5.7. Evaluate the trainee's proficiency in operator maintenance and function checks.

3.7.5.8. Provide either immediate remedial training for those trainees who fail to qualify or demonstrate required proficiency in operator maintenance or notify unit training sections of the status of individuals who fail.

3.7.5.9. Complete applicable blocks on AF Forms 522 and 710.

3.8. Administrative Requirements:

3.8.1. Reference Material:

- 3.8.1.1. AFI 36-2226, *Combat Arms Program*.
- 3.8.1.2. T.O. 11W2-6-3-161, *M2, .50 Caliber Machine Gun* (Army TM 9-1005-213-10).
- 3.8.1.3. T.O. 11W2-6-3-172, *Organizational, Direct Support, and Depot Maintenance Instruction, Including Repair Parts and Special Tolls List, Machine Gun, .50 Caliber Browning, M2 Heavy Barrel, and Mount* (Army TM 9-1005-213-25)
- 3.8.1.4. T.O. 11W2-8-32-4, *Mount, Machine Gun, MK-64 Cradle* (Army TM 9-1010-231-13&P).
- 3.8.1.5. T.O. 11W2-8-1-322, *Machine Gun Mounts* (Army TM 9-1005-245-13&P).
- 3.8.1.6. T.O. 11W3-6-184, *M2, .50 Caliber Machine Gun* (Army TM 9-1005-213-23&P).
- 3.8.1.7. T.O. 11W-6-6-1, *Browning Machine Gun, Caliber .50 HB, M2* (Army FM 23-65).
- 3.8.1.8. TM 750-244-7 *Procedures for Destruction of Equipment (Army)*.
- 3.8.1.9. TM 11-5855-214-10, *Operator's Manual For Night Vision Sight, Crew Served Weapon, AN/TVS-5*.
- 3.8.1.10. TM 750-244-2, *Procedures for Destruction of Electronics Material to Prevent Enemy Use*.

3.8.2. Facilities Needed:

- 3.8.2.1. Classroom equipped with chalkboard, tables and chairs for trainees.
- 3.8.2.2. Area to conduct practical exercises in assuming firing positions.
- 3.8.2.3. Full-distance range.
- 3.8.2.4. Vehicle fire range.
- 3.8.2.5. Weapons cleaning area.

3.8.3. Training Aids and Equipment:

- 3.8.3.1. M2, one for each two trainees.
- 3.8.3.2. One M3 tripod and T&E mechanism for each machine gun.
- 3.8.3.3. MK-64 Mod 6 gun mount, as required.
- 3.8.3.4. Dummy ammunition.
- 3.8.3.5. Empty ammunition can and empty ammunition case.
- 3.8.3.6. Care and cleaning equipment, as required by T.O. 11W2-6-3-161 or TM 9-1005-213-10.
- 3.8.3.7. Training charts.
- 3.8.3.8. Overhead projector/computer system with visual slide capability.
- 3.8.3.9. Slide projector, videocassette recorder and/or monitor.
- 3.8.3.10. Slides and transparencies.
- 3.8.3.11. Student handouts.

- 3.8.3.12. CWDE mask and gloves.
 - 3.8.3.13. Blank range cards.
 - 3.8.3.14. Vehicles designated as M2 firing platform.
 - 3.8.3.15. Targets as required.
 - 3.8.3.16. Public address system.
 - 3.8.3.17. Binoculars.
 - 3.8.3.18. Sound suppressors or ear plugs for instructors and trainees.
 - 3.8.3.19. Eye protection for instructors is mandatory and highly recommended for trainees.
 - 3.8.3.20. Flak vests and helmets.
 - 3.8.3.21. First aid kit.
 - 3.8.3.22. Combat Arms Training Simulator meeting the requirements identified in AFI 36-2226.
- 3.8.4. Documents Needed:
- 3.8.4.1. AF Form 522, *US Air Force Ground Weapons Training Data*.
 - 3.8.4.2. AF Form 710, *Combat Arms Weapons Training Record*.
 - 3.8.4.3. Performance evaluation forms.
 - 3.8.4.4. Ammunition Needed. Cartridge, .50 caliber linked.

Figure 3.1. M2 Machine Gun Firing Requirements, Air Force Qualification Course.

Order Number and target description	Ammunition and Fire Control	Type Load	Time	No. of Targets Engaged	Required Number of Target Hits to Qualify
Phase I: Practice--Tripod					
1. Zeroing 1000M	50 (3 to 5 round burst) ball or 4:1	Full	N/A	1	N/A
2. Point targets 500 to 1000M	50 (3 to 5 round burst) ball or 4:1	Half	N/A	3	N/A
3. Deep targets (CWDE) 1000 to 1500M	100 (3 to 5 round burst) ball or 4:1	Half	N/A	5	N/A
4. Linear with Depth 800 to 1100M	100 (3 to 5 round burst) ball or 4:1	Half	N/A	8	N/A
300 Total Rounds for Phase I					
Phase II: Evaluation--Tripod					
1. Point targets (CWDE) 500 to 1000M	100 (3 to 5 round burst) ball or 4:1	Half	2 min	3	3
2. Linear with depth and Deep targets 800 to 1500M	200	Half	5 min	13	13
300 Total Rounds for Phase II					
Phase III: Practice--Vehicle Firing					
1. Zeroing 1000M	25 (3 to 5 round burst) ball or 4:1	Half	N/A	1	N/A
25 Total Rounds for Phase III					
Phase IV: Evaluation--Vehicle Firing					
1. Stationary vehicle Area target 1000M	75 (3 to 5 round burst) ball or 4:1	Half	N/A	1	3
75 Total Rounds for Phase IV					

Order Number and target description	Ammunition and Fire Control	Type Load	Time	No. of Targets Engaged	Required Number of Target Hits to Qualify
Phase V: Practice--Predetermined Firing (Range Card), Day Fire					
1. Predetermined firing (range card)	100 (3 to 5 round burst) ball or 4:1	Half	N/A	4	Obtain direction and elevation readings
500 to 1000M					
Target 1, Final Protective Line (FPL)					
Target 2, Point Target					
Target 3, Area Target					
Target 4, Linear Target					
<hr/> 100 Total Rounds for Phase IV					
Phase VI: Evaluation--Night Fire					
1. Predetermined firing (range card)	100 (3 to 5 round burst) ball or 4:1	Half	N/A	4	4
Fire missions					
Target 4					
Target 3					
Target 2					
Target 1					
<hr/> 100 Total rounds for Phase VI					
<u>900 Total Rounds for Course</u>					

3.9. Course Information, M2 AFQC.

3.9.1. Course Targets:

3.9.1.1. Double "E" silhouette targets, empty 55-gallon drums, salvaged vehicles or mounds of earth can be used to represent personnel and vehicle targets.

3.9.1.2. Point targets should consist of three separate vehicle type targets.

3.9.1.3. Deep targets should consist of a minimum of five targets.

3.9.1.4. Linear with depth targets should consist of at least eight double "E" silhouette targets or paired 55-gallon drums.

3.9.1.5. Area targets should consist of at least five double "E" silhouette targets or paired 55-gallon drums and arranged to form a group.

3.9.1.6. On Phase V, designate four targets to be identified on the range cards.

3.9.1.7. On Phase VI, conduct fire missions in random order of the targets designated on the range cards.

3.9.2. Course Standards:

3.9.2.1. On Phase II, Order 1, if beaten zone covers target area, it is considered a hit. Gunner must hit three targets.

3.9.2.2. On Phase II, Order 2, if beaten zone covers target area, it is considered a hit. Gunner must hit 13 targets. Initial lay on all targets is midpoint. After the initial burst, the gunner will move to the closest part of the target to the gunner, then moves to the farthest point from the gunner and finally back to the midpoint. Instructors must ensure targets are large enough to allow adequate traversing and/or searching with the required number of bursts. Gunners will ensure beaten zones over lap while firing. Gunners will not fire and make T & E adjustments at the same time. This technique is used for training and simulates no known threat. In real-life situations, gunners will tactically engage the portion of the target posing the greatest threat to themselves or the gun position.

3.9.2.3. On Phase IV, if beaten zone covers target area, it is considered a hit. Gunner must have at least three bursts on target from a stationary position.

3.9.2.4. On Phase VI, if beaten zone covers target area, it is considered a hit. Gunner must hit four targets.

3.9.3. Course Notes:

3.9.3.1. There are no time limits during practice phases. Instructors will observe setting headspace and timing, render help needed, observe rounds impacting in target areas, correct safety infractions and supervise trainees who perform immediate action.

3.9.3.2. Assistant gunners will be used for all orders of fire. Instructors should emphasize the importance of teamwork. Except for zeroing, the assistant gunner will give fire corrections to the gunner. Gun crews will wear helmets, flak vests and hearing protection during all firing orders. Both gunner and assistant gunner must have protective masks and gloves on their person during the entire course.

3.9.3.3. Whenever possible, gun crews should fire 4:1 ball and tracer mix. All firing should be three to five round bursts; however, if assistant gunner is unable to observe beaten zone, five to seven round burst may be necessary. During qualification, once the student has fired at the required number of targets, any remaining ammunition will be returned to the instructor for placement back into the ammunition inventory. Ensure the AF Forms 522 and 710 reflect the correct number of rounds fired by the student.

3.9.3.4. Sight corrections and T&E adjustments may be made at any time throughout the course.

3.9.3.5. All phases must be fired on a full-distance range.

3.9.3.6. On orders requiring CWDE, the guncrews will don their protective masks and gloves before starting the firing orders.

3.9.3.7. Linear and deep targets will be engaged as a single gun covering the entire target.

3.9.3.8. On Phase III and Phase IV, the vehicle may be positioned parallel with or at a right angle to the firing line with the weapon pointed down range.

3.9.3.9. Phase V and Phase VI are used to train and evaluate the guncrews' ability to prepare range cards and engage targets using range cards. On Phase V, they will use a 100-round belt during daylight hours to obtain direction and readings for the targets indicated. They will have 15 minutes to

prepare field expedient range cards using bandoleer boxes, wooden spacers from ammunition crates, etc., and complete Phase V. During phase VI, gun crews will fire four fire missions using range cards prepared during phase V. Night vision devices, illumination rounds or flares may be used with night-fire training.

3.9.3.10. In the event night fire cannot be accomplished, Phases V and VI will be conducted during the day.

3.9.3.11. Do not reconstruct firing ranges for the sole purpose of complying with this course of fire.

3.9.3.12. Should the gunner fail to achieve a qualifying score on any evaluation order, the gunner is considered unqualified. However, if refired within 30 days, gunners need only to refire and qualify on those orders failed. Beyond 30 days, gunner must refire entire course.

3.9.3.13. AF Forms 522 or 710 should only reflect qualified "Q" or unqualified "UQ" for each firing phase. A numerical score is not required in the score block of these forms.

Figure 3.2. M2 Machine Gun Prone Position.



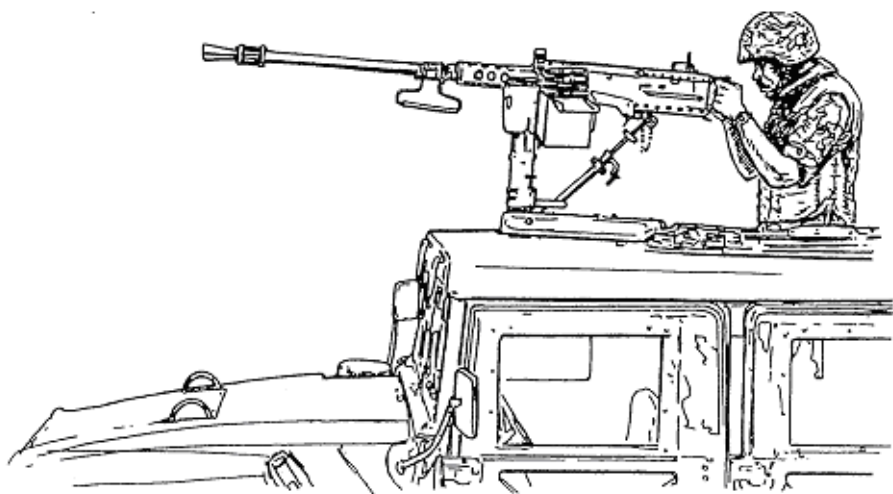
Prone Position. The gunner lays to the rear of the tripod and directly behind the gun. The gunner's legs are spread and feet are as flat as possible with toes turned outward. The left elbow may rest on the ground but the left hand should be placed on the T&E mechanism to allow rapid elevation and or traverse adjustments. The right hand is on the right spade grip and positioned to actuate the trigger. The assistant gunner's position is to the gunner's left. The assistant gunner is responsible for spotting targets, calling adjustments of fire to the gunner, clearing expended brass from under the receiver, etc.

Figure 3.3. M2 Machine Gun Sitting Position.



Sitting Position. The gunner sits between the tripod's rear legs and directly behind the gun. The gunner may sit with the legs extended (or crossed) under the tripod whichever is more comfortable. Elbows are on the inside of the thighs for stability. The left hand should be placed on the T&E mechanism to allow rapid elevation and or traverse adjustments. The right hand is on the right spade grip and positioned to actuate the trigger. The assistant gunner's position is to the gunner's left. The assistant gunner is responsible for spotting targets, calling adjustments of fire to the gunner, clearing expended brass from under the receiver, etc.

Figure 3.4. M2 Machine Gun Vehicle Mounted Position.



Vehicle Mounted Position. The gunner is positioned directly behind the weapon; both elbows are locked against the sides of the body. The gunner's position is low enough in the vehicle to align the sights.

3.10. Forms Adopted.

- 3.10.1. AF Form 797, **Job Qualification Standard Continuation/Command JQS**
- 3.10.2. AF Form 483, **Certificate of Competency**
- 3.10.3. AF Form 1098, **Special Task Certification and Recurring Training**
- 3.10.4. AF Form 422, **Physical Profile Serial Report**
- 3.10.5. AF Form 623, **On-the-Job Training Record**

3.11. Forms Prescribed.

- 3.11.1. AF Forms 522, **USAF Ground Weapons Training Data**
- 3.11.2. AF Form 710, **Combat Arms Training Record**

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Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References*****General Weapons And Equipment References**

T.O. INDEX 0-1-CD-1, *USAF Technical Order Index Data, CD Rom Version*, or obtain individual indexes, 0-1-02, 0-1-11, 0-1-12, 0-1-32, 0-1-33-1, 0-1-33-3, 0-1-33-6, 0-1-34, 0-1-43, 0-1-49

T.O. INDEX 0-4-6-2-CD-1, *CD-USAF Equipment/T.O. Number/Cross Reference File*

T.O. 33K-1-100-1, *Technical Manual, TMDE Calibration Notes, Maintenance Data Collection Codes and Calibration Measurement Summaries*

T.O. 33K-1-100-2, *Technical Manual, TMDE Calibration Interval Technical Order and Work Unit Code Reference Guide*

TM 750-244-7, *Procedures for Destruction of Equipment in Federal Supply classifications, 1000, 1005, 1010, 1015, 1020, 1025, 1030, 1055, 1090, and 1095, To Prevent Enemy Use.*

Ammunition References

T.O. 11A-1-10, *General Instructions - Munitions Serviceability Procedure.*

T.O. 11A-1-47, *Explosive Hazard Classification Procedures*

T.O. 11A-1-53, *General Instructions for Ammo Color Coding Ident of Empty and Inert Loaded Ammunition Items and Components and Assignment of Version Numbers to Training and Dummy Ammunition Items*

T.O. 11A8-2-1, *Hand and Rifle Grenades, 66mm Rocket Launcher, 81mm Mortars, 90mm Recoilless Rifle, 40mm Cartridges, Flares and Signals, Smoke Pots, and Land Mines*

T.O. 11A13-6-7, *Storage and Maintenance Procedures, 40mm Cartridge*

T.O. 11A13-9-7, *Storage and Maintenance Procedures, 81mm Cartridge*

T.O. 11A13-10-7, *Storage and Maintenance Procedures, Small Arms Ammunition*

M60 Machine Gun References

T.O. 11W1-12-8-52, *Organizational Maintenance Instructions, Including Repair Parts and Special Tools List, Machine Gun, 7.62MM, M60, W/E, Mount, Tripod Machine Gun, 7.62MM, M122/M122A1*

T.O. 11W1-12-8-61, *Operator and Maintenance Instructions with Parts Breakdown, 7.62MM Machine Gun, M60 C and D*

T.O. 11W2-6-4-11, *Operator's Manual, Machine Gun, 7.62MM M60 W/E, Mount Tripod, MG, 7.62MM, M122/M122A1, and M60 OR M240BD W/E (Army TM 9-1005-224-10) (This replaces 11W1-12-8-41)*

T.O. 11W2-6-4-12, *Organizational, Direct Support, and General Support Maintenance Manual, Machine Gun, 7.62MM M60 W/E, and Mount, Tripod, Machine Gun, 7.62MM, M122/M122A1, (This replaces 11W1-12-8-52 when published) (Army TM 9-1005-224-24)*

T.O. 11W2-6-4-14, *Direct Support and General Support Maintenance Repair Parts and Special Tool List (Including Depot Maintenance Repair Parts and Special Tools List), Machine Gun, 7.62MM, M60 W/E, Mount, Tripod Machine Gun 7.62MM, M122/M122A1 (Army TM 9-1005-224-24P)*

T.O. 11W2-6-4-21, *Field Manual, Machine Gun, 7.62-MM, M60 (Army FM 23-67)*

MK-19 Machine Gun References

T.O. 11W2-5-16-1, *Operator's Manual and Components List, Machine Gun 40mm, MK-19 Mod 3 (Army TM 9-1010-230-10)*

T.O. 11W2-5-16-2, *Organizational and Intermediate Maintenance Manual, Including Repair Parts List, Machine Gun, 40mm, MK-19 Mod 3 (Army TM 9-1010-230-23&P)*

T.O. 11W2-5-18-1, *MK-19, 40mm Grenade Machine Gun, Mod 3 (Army FM 23-27)*

M2 Machine Gun References

T.O. 11W2-6-3-161, *Operator's Manual, Machine Gun, Caliber .50 Browning M2, Heavy Barrel, Flexible W/E (Army TM 9-1005-213-10)*

T.O. 11W2-6-3-172, *Organizational, Direct Support, General Support and Depot Maintenance Instruction Including Repair Parts and Special Tools List, Machine Gun, .50 Caliber, Browning, M2 Heavy Barrel, Flexible W/E, Mount Tripod M3 (Army TM 9-1005-213-25)*

T.O. 11W2-6-3-184, *Unit and Direct Support Maintenance Repair Parts and Special Tools List (Including Depot Repair Parts and Special Tools List) for Machine Gun, Caliber .50 Browning M1 Heavy Barrel, Flexible and Machine Gun, Caliber .50 Browning M2 Heavy Barrel, Flexible and Mount, Tripod M3 (Army TM 9-1005-213-23P)*

T.O. 11W2-6-6-1, *Browning Machine Gun Caliber .50 HB, M2 (Army FM 23-65)*

M240B Machine Gun References

TM 9-1005-313-10, *Operator's Manual for Machine Gun, 7.62MM, M240 (Army)*

TM 9-1005-313-23&P, *Technical Manual Unit and Direct Support Maintenance Manual (Army)*

Mortar References

T.O. 11W2-5-13-11, *Operator's and Organizational Maintenance Instruction, 81MM Mortar M29, 81MM Mortar Mounts M23 and M23A1, 81Mm Mortar Baseplates M23 and M23A1 (Army TM 9-3064)*

T.O. 11W2-5-13-21, *Mortar Gunnery (Army FM 23-91)*

T.O. 11W2-5-13-31, *Mortars (Army FM 23-90)*

T.O. 11W2-5-17-1, *Operator's Manual for Mortar, 81MM, M29A1 (Army TM 9-1015-200-10)*

T.O. 11W2-5-17-2, *Organizational Maintenance Manual Including Repair Parts and Special Tools List for 81MM Mortar, M29A1 (Army TM 9-1015-200-20&P)*

T.O. 11W2-5-19-11, *Hand Receipt, covering contents of components of End Item (COEI), Basic Issue Items (BIT), and Additional Authorization List (ALL) for 81MM Mortar, Model M252 (Army TM 9-1015-249-10-HR)*

T.O. 11W2-5-21-1, *Operator's Manual for Mortar, 81-MM, M252 (Army TM 9-1015-249-10)*

T.O. 11W2-5-21-2, *Unit and Direct Support Maintenance Manual With Repair Parts and Special Tools List for 81-MM Mortar, M252 (Army TM 9-1015-249-23&P)*

T.O. 11W2-13-6-2, *Direct Support/General Support Maintenance Including Repair Parts/Special Tools for M53/M53AU Sight Unit (Army TM 9-1240-287-34&P)*

T.O. 11W2-13-7-2, *Operator's, Organizational Maintenance Manual Including Repair Parts/Special Tools for Sight, Bore, Optical M45 (Army TM 9-1240-278-24&P)*

T.O. 11W2-13-8-1, *Operator's, Organizational Maintenance Manual Including Repair Parts/Special Tools List for Mortar Ballistics Computer Set M23 (Army TM 9-1220-246-12&P)*

T.O. 11W2-13-8-2, *Direct Support/General Support Maintenance Manual Including Repair Parts/Special Tools List for Mortar Ballistics Computer Set M23 (Army TM 9-1220-246-34&P)*

T.O. 11W2-13-9-2, *Direct Support and General Support Maintenance Manual Including Repair Parts and Special Tools List (Includes Depot Maintenance Repair Parts and Special Tools) Mount, Telescope (Part of M64 and M64A1 Sight Unit) (Army TM 9-1240-386-34&P)*

T.O. 11WA1-1-1, *Firing Tables Mortar 81MM, M29, Mortar Self-Propelled, M125A1, M125, Assault Vehicle-Full Tracked Amphibious, XM733 Firing Cartridge, HE-M37A and WP-M375 (Army FT 81-AI-2)*

T.O. 11WA1-4-3-1, *Firing Tables Mortar 81MM, M29 and M1 (Army FT 81-AB-2)*

FM 7-90, *Tactical Employment of Mortars (Army)*

TM 9-1000-202-14, *Evaluation of Cannon Tubes (Army)*

TM 9-6650-235-13&P, *Operator's, Organizational, and Direct Support Maintenance Manual (Including Repair Parts and Special Tools List) (Including Depot Maintenance Repair Parts) for Borescope, M3 (Army)*

Night Vision Device References

T.O. 12S10-2PVS4-1, *Operator's Manual Night Vision Sight, Individual Served Weapon, AN/PVS-4 (Army TM 11-5855-213-10)*

T.O. 12S10-2PVS4-2, *Organizational, Direct Support, and General Support Maintenance Manual Including Parts and Special Tools List, Night Vision Sight AN/PVS-4 (Army TM 11-5855-213-24&P)*

T.O. 12S10-2PVS4-4, *Organizational and Direct Support Maintenance Repair Parts and Special Tools List for Night Vision Sight Individual Served Weapon, AN/PVS-4*

T.O. 12S10-2PVS5-1, *Operator's Manual Night Vision Goggles, Ground Use, AN/PVS-5, AN/PVS-5/A, AN-PVS-5B, AN/PVS-5C (Army TM 11-5855-238-10)*

T.O. 12S10-2PVS5-2-1, *Supplementary Manual, Intermediate Maintenance Instruction Night Vision Goggles, AN/PVS-5 and AN/PVS-5A*

T.O. 12S10-2PVS5-22, *Unit and Direct Support Maintenance and Aviation Unit /Intermediate Maintenance, Including Repair Parts and Special Tools List, Night Vision Goggles, Ground Use, AN/PVS-5, -5A*

T.O. 12S10-2PVS7-11, *Operator's Manual Night Vision Goggle, AN/PVS-7B and AN/PVS-7D (Army TM 11-5855-262-10-2)*

T.O. 12S10-2PVS7-12, *Unit and Direct Support Maintenance Manual (Including Repair Parts and Special Tools List) Night Vision Goggles AN/PVS-7B (Army TM 11-5855-262-23&P)*

T.O. 12S10-2PVS7-22, *Organizational, Direct Support, General Support Maintenance, Night Vision Goggle, AN/PVS-7A (Army TM 11-5855-262-23&P-1)*

TM 11-5855-214-10, *Operator's Manual Night Vision Sight, Crew Served Weapon, AN/TVS-5 (Army)*

TM 11-5855-262-10-1, *Operator's Manual Night Vision Goggle, AN/PVS-7A (Army)*

TM 11-5855-297-12&P, *Operator's and Unit Maintenance Manual (Including Repair Parts and Special Tools List) Aiming Light, Infrared, AN/PAQ-4A (Army)*

TM 11-5855-301-12&P, *Operator's and Unit Maintenance Manual (Including Repair Parts and Special Tools List) Light, Aiming, Infrared, AN/PAQ-4B, AN/PAQ-4C (Army)*

AP90100, *Operator's Manual, Laser Aiming Lighting Projector System (LALPS), Havis Shields Equipment Corporation Advantage Point Aiming Light Assembly (commercial publication)*

TM 11-5855-306-10, *Operator's manual, Monocular Night Vision Device (MNVD) AN/PVS-14*

Mount References

T.O. 11W2-8-1-322, *Machine Gun Mounts (Army TM 9-1005-245-14, replaced by TM 9-1005-245-13&P)*

T.O. 11W2-8-32-4, *Mount, Machine Gun, MK 64 Cradle (Army TM 9-1010-231-13&P)*

T.O. 36A12-1A-3061-1, *Operator's Manual, Truck Utility Carrier, Up-Armored (Army TM 9-2230-387-10)*

T.O. 36A12-1A-3061-1-1, *Supplement, Operator's Manual, Truck Utility Carrier, Up-Armored (Army TM 9-2230-387-10)*

SW370-B9-OPI-010, *Operator's Manual, M203 Quick Release Front Mounting Bracket (Knight's Armament Company Commercial Manual)*

Targets, Scopes, Adapters, Tools, and Other Weapon Related References

T.O. 11W2-17-3-1, *Operator's, Organizational Maintenance Manual Including Repair Parts and Special Tools List for Blank Firing Attachment (BFA) M19 for Caliber .50, M2 Heavy Barrel Machine Gun (Army TM 9-1005-314-12&P)*

T.O. 34-1-3, *Inspection and Maintenance, Machine and Shop Equipment*

T.O. 35E20-4-22-1, *Operation, Maintenance, and Overhaul Instruction with IPB, PN 11214-4094-100, shipping Container -200, -300, M16 (Green Plastic M16 Containers)*

T.O. 43E11-1-121, *Small Arms Targets and Target Material*

Abbreviations and Acronyms

AETC—Air Education and Training Command

AFI—Air Force Instruction

AFMAN—Air Force Manual (New Version)

AFOSI—Air Force Office of Special Investigations

AFOSI PPC—Air Force Office of Special Investigations, Practical Pistol Course

AFPD—Air Force Policy Directive

AFQC—Air Force Qualification Course

AFRC—Air Force Reserve Command

AFSC—Air Force Specialty Code

ANG—Air National Guard

CA—Combat Arms

CE—Civil Engineer

CY—Calendar Year

DoD—Department of Defense

HQ AFSFC—Headquarters Air Force Security Forces Center

HQ USAF/XOF—Headquarters United States Air Force, Director of Security Forces

MAJCOM—Major Command

TO—Technical Order

TTP—Tactics, Techniques and Procedures

Terms

Certification—A formal indication of an individual's ability to perform a task to required standards.

Certification Official—A person whom the commander assigns to determine an individual's ability to perform a task to required standards.

Deployment—The relocation of forces and material to desired areas of operations. Deployment encompasses all activities from origin or home station through destination, specifically including intra-continental United States, inter-theater and intra-theater movement legs, staging and holding areas.

Firearm—Any weapon designed to expel a projectile through a barrel by the action of a propellant or one you can readily convert to this purpose.

Firing Line—The line where weapons are fired and where no one may move in front/forward of during firing. Usually a 4-inch wide red line located as close as possible to the front of the firing position.

Firing Line Instructor—The assigned individual(s) on the firing platform who enforces safety procedures/policies and coaches shooters during range training.

Firing Position—The point or location where a weapon, other than demolitions, is placed for firing. (For demolitions, the firing position is the point or location where the firing crew is located during demolition operations).

Range—An area reserved and normally equipped for qualification/practice in weapons delivery and/or shooting at targets.

Ready Line—The line located behind the firing line. Serves as a “staging” area for shooters to receive prefired range commands. Usually identified by a 4-inch-wide yellow line located at least 6 feet behind the firing line.

Standard—A value of average but acceptable quality, a minimum qualifying score or an objective standard of Go/No Go.

Theater—The geographical area outside the continental United States assigned to a combatant commander.

Tower Operator—The person who monitors the entire range at all times, paying particular attention to the firing line.